#### **ACKNOWLEDGEMENT FORM**

Bid No. 2013-11

"Restoration Downtown on Main Street between Main Street Ramp and Hotel Bethlehem Driveway" Project No. STW-13-C04

This form is to acknowledge that you have reviewed, downloaded and are planning to bid on the above reference project.

Please complete the form below and fax this back to (610) 865-7019, or email this completed form to <a href="mailto:jcollins@bethlehem-pa.gov">jcollins@bethlehem-pa.gov</a>. If and when there are addendums to this bid specification we can send them to you.

Printed Name	 ,				
Signature					
Company Name					
Address					
City/State and Zip					
Phone Number	Fax I	Number			
E-Mail address					

Email: jcollins@bethlehem-pa.gov

**Attention – City of Bethlehem Purchasing Department** 

Fax Number - (610) 865-7019

Specifications For

# RESTORATION DOWNTOWN ON MAIN STREET BETWEEN MAIN STREET RAMP AND HOTEL BETHLEHEM DRIVEWAY

PROJECT NO. STW-13-C04
BID NO. 2013-11

City of Bethlehem, Pennsylvania Department of Public Works Bureau of Engineering

**JULY 2013** 

# TABLE OF CONTENTS

# PROJECT NO. SW-13-C04

	PAGE
BID REQUEST	
PRE-BID MEETING	
DEFINITIONS	
STANDARD REQUIREMENTS FOR BIDDERS	1 to 13
PUBLIC WORKS EMPLOYMENT VERIFICATION FORM	
PREVAILING MINIMUM WAGE DETERMINATION	
STATEMENT OF APPROXIMATE QUANTITIES	2 sheets
PROPOSAL	P-1 to P-6
CONTRACT AGREEMENT	1 to 13
GENERAL PROVISIONS	GP-1 to GP-20
SPECIAL TECHNICAL PROVISIONS	STP-1 to STP-4
DETAILED SPECIFICATIONS	DS-1 to DS-15
SPECIFICATIONS FOR EXCAVATION, TRENCHING AND BACKFILLING UTILITY SYSTEMS	ETB-1 to ETB-14

LIST OF DRAWINGS

#### CITY OF BETHLEHEM, PA

#### Request for Bid No. 2013-11

Sealed bids marked "RESTORATION DOWNTOWN on MAIN STREET between MAIN STREET RAMP and HOTEL BETHLEHEM DRIVEWAY, Project No. STW-13-C04" will be received at this office until 10:00 A.M., TUESDAY, JULY 30, 2013 at which time they will be publicly opened and read. LATE BIDS WILL NOT BE ACCEPTED.

Plans and specifications may be downloaded for free from the City of Bethlehem Website. The Website address is www.bethlehem-pa.gov.

Paper copies of the plans and specifications can be purchased for \$250.00 by sending a check to the City of Bethlehem, Purchasing Department, 10 East Church Street, Bethlehem, PA 18018.

All sealed bids must be sent or delivered to the City of Bethlehem Purchasing Department, Room B-305, 10 East Church Street, Bethlehem, PA 18018, prior to 10:00 A.M., TUESDAY, JULY 30, 2013.

Sealed Bid envelopes must be marked with Bidder's Name, Bid Number, and Description.

A Pre-Bid Meeting will be held at 10:00 A.M., MONDAY, JULY 15, 2013, in room B-504, City of Bethlehem, City Hall, 10 East Church Street, Bethlehem, PA 18018 to answer any questions. All prospective bidders are encouraged to attend.

Mary Jo Reed Director of Purchasing

# PRE-BID MEETING

# PROJECT NO. ST-13-C04

A Pre-Bid Meeting will be held at <u>10:00 A.M., Monday, July 15, 2013</u> in City Hall Building Room B-504, 10 East Church Street, Bethlehem, PA, 18018 to answer any questions of prospective bidders.

Michael Alkhal Director of Public Works/City Engineer

#### **DEFINITIONS**

- Wherever the following words or phrases occur in the Contract or specifications they shall have the following meanings:
- "City" shall mean the City of Bethlehem, Pennsylvania.
- "Owner" shall mean the City of Bethlehem, Pennsylvania.
- "Department" shall mean the Department of Public Works, Bethlehem, Pennsylvania.
- "Director" shall mean the Director of the Department of Public Works or such persons authorized to act in his place.
- "Engineer" shall mean the City Engineer acting directly or through his properly authorized agents.
- "Contractor" shall mean the party of the first part entering into this contract for the performance of the work required by it, and the legal representation of said party, or the agent appointed to act for said party in the performance of the work.
- "Extra Work" shall mean work other than that required by the contract at the time of its execution.
- "Written Notice" shall be deemed to have been duly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered main to the last known business address.

#### CITY OF BETHLEHEM, PENNSYLVANIA

#### STANDARD REQUIREMENTS FOR BIDDERS

#### 1. Bid Deposit

Each bid must be accompanied by a certified check drawn upon a bank authorized to do business in this Commonwealth, in an amount equal to ten percent (10%) of the total amount of the bid, or by a bid bond with approved corporate surety in a principal sum equal to at least ten percent (10%) of the total amount of the bid. Bank cashier checks or other direct obligations of the bank are acceptable in lieu of certified checks.

Bid Security Deposits must be made payable to the City of Bethlehem.

When computing amount of bid, DO NOT deduct for trade-ins or cash discounts (if offered).

Bid Security Deposits shall be forfeited to the City of Bethlehem as liquidated damages in the event that any bidder shall, upon award of the Contract to him, fail to execute it and to comply with the requirements of the Contract.

If a bidder is awarded the contract and has submitted surety in the form of a certified check, the City shall retain possession of such surety until he has delivered to the City an acceptable Performance Bond.

The City will not return bid bonds to any bidder unless specifically requested in writing by individual bidder. Other forms of surety, (i.e., certified check), will be returned to all unsuccessful bidders.

#### 2. Description of Work

The work to be completed under this project is located in the Fourth  $(6^{\rm th})$  Ward, City of Bethlehem, Northampton County, Pennsylvania, on the west side of Main Street between the Main Street Ramp and the Hotel Bethlehem Driveway.

The work consists of removing the existing grass and stone parkway between the sidewalk and curb, and replacing with 2 ½" brick along with the associated bedding and all other necessary work for the satisfactory completion of the project as shown on the Contract Drawings. An alternate bid item for the planting of street trees is also included.

#### 3. Time of Completion

The Contractor shall agree, if awarded the Contract for this project, that they will commence work at the site within ten (10) days after date of a Notice to Proceed from the City. The Contractor also agrees, if awarded the Contract for this project, to complete the project within THIRTY (30) days from the same Notice to Proceed issued by the City.

The Contractor's attention is directed to the fact that he may not work on those days which are recognized by the City as Legal Holidays or on Saturdays or on Sundays except in an emergency or with prior approval of the City Engineer.

#### 4. Bidder's Qualifications

No proposal will be considered from any Bidder for any Contract Item unless he is known to be skilled and has been regularly engaged in work of a character similar to that covered by the Drawings and Specifications for at least five (5) years prior to the date of proposed work. In order to aid the City of Bethlehem in determining the responsibility of any bidder, the bidder shall, within forty-eight (48) hours after being requested in writing by the City Engineer of the Bidder's experience and familiarity with the work of the character specified and his financial ability to prosecute properly the proposed work to completion within the specified time. The evidence requested may, without being limited hereby, include the following:

(a) The bidder's performance record with listing of work of a similar character and proportions which he has constructed giving the name of the owner, date built and constructed cost;

- (b) A tabulation of other work now under Contract, giving the location, type, size, required date of completion and the percent of completion to date of each job;
- (c) An itemized list of the bidder's equipment available for use on the proposed contract;
- (d) The City shall have the right to require the successful bidder to provide a list of all Subcontractors for review prior to the award of the contract. Should any sub-contractor not be acceptable to the City based on previous performance on contract work in the City, the City may require the successful bidder to replace the unacceptable sub-contractor prior to the award of the Contract;
- (e) The Bidder's Financial Statement;
- (f) Evidence in the case of a corporation organized under the laws of any other State, that the bidder is licensed to do business in the Commonwealth of Pennsylvania; and
- (g) Such additional information is adequately prepared to fulfill the Contract.

The City of Bethlehem shall have the right to disqualify any bidder who in the past has not performed in accordance with the contractual requirements of a previous contract for the City.

#### 5. Bond Requirements

The following bonds are required:

(a) Performance Bond - A bond in a sum equal to one hundred percent (100%) of the Contract Sum, running to the City of Bethlehem to insure the construction and the completion of the entire work according to the Contract Documents and within the time specified. The Bonding Company must have a rating of B+, A or A+ as determined by Best's Rating Services or an equivalent agency.

- (b) Labor and Material Bond A bond in a sum equal to one hundred percent (100%) of the Contract Sum, running to the City of Bethlehem for the protection of subcontractors, labor and material men, according to the statutes of the Commonwealth of Pennsylvania in effect at the time of the date of the bond.
- (c) Maintenance Bond A maintenance bond in a sum equal to ten percent (10%) of the Contract Sum, or in the amount of one thousand dollars (\$1,000), whichever amount is the larger sum, guaranteeing the City of Bethlehem against faulty workmanship and materials incorporated in the work covered by the Contract for a period of one (1) year after the date of the completion, approval and acceptance of the work.

Should any surety upon the Contract be deemed unsatisfactory at any time to the City of Bethlehem, notice will be given to the Contractor to that effect, and the Contractor shall forthwith substitute a new surety or sureties, satisfactory to the City, without any additional cost or expense to the City of Bethlehem.

#### 6. Forms of Bids

Each bid must be submitted upon the prescribed form available at the Office of the City Purchasing Director and must contain:

- (a) The name, residence and place of business of the person or persons making the same;
- (b) The names of all persons interested therein, and if no other person is so interested, such fact must be distinctly stated;
- (c) A statement to the effect that it is made without any connection with any other person making a bid for the same purpose and it is in all respects fail and without collusion or fraud;

- d) A statement that no elected or appointed official or any person whose salary is payable whole or in part from the City of Bethlehem is directly or indirectly interested therein of in the supplies, materials or equipment and work or labor to which it relates, or in any portion of the profits therefrom; and
- (e) A statement that the bidder is not in arrears to the City of Bethlehem or to any other agency
- (f) thereof upon a debt or contract, and is not a defaulter as surety or otherwise upon any obligation to the City of Bethlehem or to any agency thereof, except as set forth in the bid.

#### 7. Presentation of Bids

The bid must be verified and be presented to the Purchasing Director of the City of Bethlehem on the prescribed form in a sealed envelope on or before the time and the place mentioned in the advertisements for bids, endorsed with the name of the person, firm or corporation presenting it, the date of the presentation and the title of the work for which the bid is made.

#### 8. Rejection of Bids

- (a) The City of Bethlehem may reject a bid if:
  - 1. The Bidder miss-states or conceals any material fact in the bid; or if
  - 2. The Bid does not strictly conform to law or to the requirements of the Contract; or if
  - 3. The Bid is conditional; or if
  - 4. A determination is made that the bidder is not responsible in accordance with law.
- (b) The City of Bethlehem, however, reserves the right to reject all bids whenever it deems it in the interest of the City to do so, and also the right to waive any informalities in the bidding, and to award the Contract in the best interest of the City.

#### 9. Bidder Eligibility

Bids will only be accepted from bidders who are actively engaged in the type of work or service called for in the bid. No proposal will be accepted or contract awarded to any bidder that is in arrears or in default to the City. Where work is to be performed by a subcontractor, the bidder must name the subcontractor and the City reserves the right to determine whether the named subcontractor is fit and capable to perform the required work.

#### 10. Bidders Present

At the time fixed for the opening of bids, their contents will be made public for the information of bidders and Others properly interested who may be present either in person or by representative.

#### 11. Examination of Plans, Site and Transportation

Bidders are required to submit their Proposals upon the following express conditions:

The Bidder shall examine the Drawings and Specifications and make a personal examination of the site in order to acquaint himself with the conditions under which he will be obligated to work.

The Bidder shall make all the investigations necessary to inform him thoroughly regarding all facilities for the delivery of materials and equipment as he may require for his construction operations.

The Bidder is also required to examine all maps, plans and data on file in the office of the City Engineer for examination by prospective bidders. No plea of ignorance of conditions that exist or that may hereafter exist, or of conditions or difficulties that may be encountered in the execution of the work under examinations and investigations, will be accepted as an excuse for any failure or omission on the part of the Contractor to fulfill in every detail all the requirements of said Contract Documents, or will be accepted as a basis for any claims whatsoever for extra compensation or for an extension of time.

#### 12. Examination of Proposed Contract

Prospective Bidders must examine the Contract Documents carefully and, before bidding, must request the City Engineer in writing for an interpretation or correction, of every patent ambiguity, inconsistency or error therein. Such interpretation or correction, as well as any additional Contract provisions the City Engineer may decide to include, will be issued in writing by the City Engineer as an Addendum to the Contract, which will be mailed or delivered to each person recorded as having received a copy of the Contract Documents from the Purchasing Agent, and which will also be posted at the place where the Contract Documents are available for the inspection of prospective bidders. Upon such mailing or delivery and posting, such Addendum shall become part of the Contract Documents, and be binding on all Bidders whether or not notice of such Addendum is shown.

The written interpretation or correction so given by the City Engineer shall be binding, and prospective bidders are warned that no other officers, agents or employees of the City of Bethlehem are authorized to give information concerning, or to explain or interpret, the Contract.

If the Contractor, prior to the submission of his bid, fails to call the City Engineer's attention to the existence of any ambiguity, inconsistency or error in the Contract, his bid will be conclusively presumed to have been based upon the interpretation of such ambiguity or inconsistency, or upon the directions correcting such error which may subsequently be given by the City Engineer.

#### 13. Contract Award

The City of Bethlehem will either award the Contract within sixty (60) days, or reject all bids. Award, if any, will be made to the lowest and best bidder complying with the terms of the Contract as determined by the City of Bethlehem.

#### 14. Forfeiture

If the Bidder to whom the Contract is awarded refuses or neglects to execute it, or fails to furnish the required security, within ten (10) days after notice to him of the

award, the amount of his deposit, or as much thereof as may be applicable to the amount of the award made him, shall be forfeited, and shall be retained by the City of Bethlehem as liquidated damages. The Bidder shall also be liable for and agrees to pay to the City of Bethlehem on demand the difference between the price bid by him and the price for which such Contract shall be subsequently relet, including the cost of such reletting, if any, less the amount of his deposit. No plea of mistake in such accepted bid shall be available to the bidder for the recovery of his deposit or as a defense to any action based upon such accepted bid.

#### 15. Insurance

Contractor covenants and agrees that before the commencement of the work herein provided for, that Contractor is protected by the following type of insurance:

- (a) Workman's Compensation Insurance
- (b) Employer's Liability Insurance
- (c) Contractor's Public Liability Insurance \$1,000,000.00 Property Damage Insurance - \$500,000.00
- (d) Such other insurance, fire or other, as will indemnify and protect City and Contractor insofar as their respective interest may appear.
- (e) City of Bethlehem shall be named as "A Named Insured" on all insurance Contracts in effect during the life span on the Contract.

# 16. <u>Indemnity</u>

The Contract shall indemnify and save harmless the City of Bethlehem from and against all losses and all claims, demands, payments, suits, recoveries and judgments of every nature and description brought or recovered against him, by reason of any act or omission of said Contractor, his agents or employees, in the execution of the work or in the guarding of it.

#### 17. Extra Work

No extra work will be considered unless such work is authorized, in advance in writing by the City.

#### 18. Weekend and Holiday Work

The Contractor's attention is directed to the fact that he may not work on those days which are recognized by the City as Legal Holidays or on Saturdays or on Sundays except in an emergency or with prior approval of the City Engineer in writing.

#### 19. Earned Income Tax Returns

The Bidder further agrees that should he enter into a contract with the City to perform all or any portion of the work included herein he will procure from the City of Bethlehem, Earned Income Tax Returns, and will comply with all the requirements listed thereon.

#### 20. Quantities

The quantities set forth in the proposal are estimated and the awards may be made for more or less. The City may make an award for all or some of the items set forth in the Proposal.

#### 21. Tax Exemption

The City is exempt from State and Federal taxes, and an exemption certificate is not required by a political subdivision. Prices should be exclusive of all taxes.

#### 22. Specifications and Product Description

(a) When brand names, model numbers, etc. are mentioned, they are, unless otherwise specified, intended to indicate type, quality, and design, and are not intended to be restrictive, but rather to establish criteria for the intended use. Bids on similar design and quality will be considered and evaluated.

- (b) All Bidders are required to submit with their bid, complete manufacturer's literature which describes the bid (s) being offered.
- (c) ANY EXCEPTIONS OR DEVIATIONS FROM THESE SPECIFICATIONS
  MUST BE FULLY EXPLAINED IN A SEPARATE BID LETTER!

#### 23. Guarantee and Warranty

The Bidder guarantees that all items offered for sale comply fully or are fully equal to the item required and specified. All expenses covering return or replacement of defective or improper merchandise shall be borne by the vendor. If the vendor shall fail to replace to replace or repair any defective or improper merchandise within thirty (30) days from date of notice, the City may make the necessary corrective arrangements and charge the cost to money due the vendor or bill the vendor. The vendor agrees to reimburse the City in such instance. Samples of any warranties or guarantees which will apply to the goods being offered for sale, shall be included as part of the bid.

# **NOTE:** EITHER

- 24. PENNSYLVANIA PREVAILING WAGE ACT
  - or
- 25. FEDERAL LABOR STANDARDS PROVISIONS DAVIS BACON AND RELATED ACTS will apply to this Contract.

#### 26. Pennsylvania Prevailing Wage Act

The Bidder further agrees that should he enter into a contract with the City to perform all or any portion of the work included herein he will comply with all provisions of the "Pennsylvania Prevailing Wage Act", Act 442 of August 15, 1961, as amended, including all rules and regulations therein under.

(a) The "Payroll Certification for Public Works Projects" from the Commonwealth of Pennsylvania shall be completed and submitted weekly to the City by the Contractor and any Subcontractors. At the conclusion of the project, a Final Certification must be submitted prior to the City of Bethlehem releasing payment of the contract retention to the Bidder.

(b) The "Payroll Certification for Public Works Projects" submitted to the City by the Contractor and any Subcontractors shall be kept on file for the duration of the contract. The original of the certification shall be kept for twelve (12) years following final acceptance of the project as required under the Pennsylvania Records Retention Law.

#### 27. Federal Labor Standards Provision

The Bidder further agrees that should he enter into a Contract with the City to perform all or any portion of the work included herein he will comply with all provisions of the "Federal Fair Labor Standards Provisions Act", Copeland Act 29 CFR, Housing Act of 1937, and the Housing Act of 1949.

Reference to the General Wage Decision Sheets in the Federal Labor Standards and Wage Determination Section attached.

#### 28. Safety and Health Regulations

The Bidder further agrees that should he enter into a contract with the City to perform all or any portion of the work included herein, he will comply with all of the provisions of the Department of Labor, Occupational Safety and Health Administration, Safety and Health Regulations for Construction, contained in the Federal Register Volume 37, Number 243, Part II, dated Saturday, December 16, 1972.

#### 29. Pennsylvania Steel Products Procurement Act

The Bidder further agrees that should he enter into a Contract with the City to perform all or any portion of the work included herein he will comply with provisions of the "Pennsylvania Steel Products Procurement Act", Act 3 of March 3, 1978, including all rules and regulations therein under. Essentially this requires:

"- - - that, if any steel products are to be used or supplied in the performance of the contract, only steel products - - - rolled, formed, shaped, drawn, extruded, forged, cast, fabricated or otherwise similarly processed,

or processed by a combination of two or more of such operations, from steel made in the United States by the open hearth, basic oxygen, electric furnace, Bessemer or other steel making process - - - shall be used or supplied in the performance of the Contract or any subcontracts therein under."

#### 30. Bethlehem Buy American Ordinance

The Bidder further agrees that should he enter into a Contract with the City to perform all or any portion of the work included herein he will comply with the provision of the Bethlehem "Buy American" Ordinance, Ordinance No. 2911, including all rules and regulations hereunder. Essentially this requires:

"That the City of Bethlehem shall not purchase or obligate funds for the procurement of equipment or material by way of any purchase order or contract for material or equipment, the total value of which is in excess of five thousand dollars (\$5,000), unless such equipment or material is manufactured, assembled or otherwise produced in the United States."

"That every Contract for public work shall contain a provision that in the performance of the work the Contractor and all subcontractors shall use only the material produced in the United States."

The above provisions shall not apply where the City finds:

- (a) That such equipment or materials is not produced in the United States in sufficient and reasonable available quantities and of satisfactory quality; or
- (b) That the purchase of equipment or material produced in the United States would increase the overall cost of the Contract by more than twenty-five (25) percent.

## 31. Affirmative Action Requirement

The City of Bethlehem is an "Equal Opportunity Employer", and reserves the right to disqualify any contractor who practices discrimination in hiring and employment.

To obtain a copy of the City's Equal Employment Opportunity Plan short form, please contact the City's Compliance Officer at 610-865-7099.



#### **COMMONWEALTH OF PENNSYLVANIA**

# **PUBLIC WORKS EMPLOYMENT VERIFICATION FORM**

		Date
Business or Organization Name (Employer)		
Address		
City	State	Zip Code
Contractor Subcontractor (check one	)	
Contracting Public Body		
Contract/Project No	· .	
Project Description		
Project Location		
As a contractor/subcontractor for the above re of the above date, our company is in complian ('the Act') through utilization of the federal E Department of Homeland Security. To the E January 1, 2013 are authorized to work in the U It is also agreed to that all public works contributed.	ce with the Public -Verify Program (E pest of my/our kn Inited States.	Works Employment Verification Act EVP) operated by the United States owledge, all employees hired post
verify the employment eligibility of each new hate throughout the duration of the public work federal EVP upon each new hire shall be maintained.	rks contract. Docu	mentation confirming the use of the
I,, authorized reinformation contained in this verification form of false or misleading information in connectanctions provided by law.	is true and correct	and understand that the submission
	<u> </u>	Authorized Penyscontative Signature



BUREAU OF LABOR LAW COMPLIANCE

#### PREVAILING WAGES PROJECT RATES

Project Name: Restoration Downtown

Awarding Agency: City of Bethlehem

Contract Award Date: 8/5/2013

Serial Number: 13-04256

Project Classification: Highway

Determination Date: 6/26/2013

Assigned Field Office: Scranton

Field Office Phone Number: 570-963-4577

Toll Free Phone Number: 877-214-3962

#### **Northampton County**

Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Asbestos & Insulation Workers	6/28/2010		\$30.63	\$20.13	\$50.76
Asbestos & Insulation Workers	6/27/2011		\$33.88	\$18.88	\$52.76
Asbestos & Insulation Workers	7/2/2012		\$32.17	\$21.59	\$53.76
Asbestos & Insulation Workers	7/1/2013		\$32.17	\$22.59	\$54.76
Asbestos & Insulation Workers	6/30/2014		\$34.17	\$21.59	\$55.76
Boilermaker (Commercial, Institutional,	1/1/2010		\$23.59	\$15.15	\$38.74
and Minor Repair Work) Boilermaker (Commercial, Institutional, and Minor Repair Work)	3/1/2011		\$24.22	\$16.02	\$40.24
Boilermaker (Commercial, Institutional, and Minor Repair Work)	5/1/2012		\$24.84	\$16.90	\$41.74
Boilermakers	1/1/2011		\$37.35	\$28.12	\$65.47
Boilermakers	1/1/2012		\$37.62	\$29.85	\$67.47
Boilermakers	1/1/2013		\$38.69	\$31.13	\$69.82
Boilermakers	4/1/2013		\$38.54	\$31.43	\$69.97
Bricklayers, Stone Masons, Pointers, Caulkers, Cleaners	5/2/2011		\$30.28	\$15.77	\$46.05
Bricklayers, Stone Masons, Pointers, Caulkers, Cleaners	4/29/2012		\$30.58	\$16.02	\$46.60
Bricklayers, Stone Masons, Pointers, Caulkers, Cleaners	4/28/2013		\$31.01	\$16.29	\$47.30
Bricklayers, Stone Masons, Pointers, Caulkers, Cleaners	5/4/2014		\$31.54	<b>\$16.56</b>	\$48.10

Page 1 of 15 06/26/2013

Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Bricklayers, Stone Masons, Pointers,	5/3/2015		\$32.12	\$16.83	\$48.95
Caulkers, Cleaners Bricklayers, Stone Masons, Pointers,	5/1/2016		\$32.74	\$17.11	\$49.85
Caulkers, Cleaners Carpenters	5/1/2011		\$31.09	\$21.47	\$52.56
Carpenters	5/1/2012		\$31.24	\$22.14	\$53.38
Carpenters	5/1/2013		\$32.04	\$22.14	\$54.18
Carpenters	5/1/2014		\$32.99	\$22.14	\$55.13
Carpenters	5/1/2015		\$33.94	\$22.14	\$56.08
Cement Masons	5/1/2009	,	\$26.43	\$15.51	\$41.94
Cement Masons	5/2/2010		\$27.01	\$15.32	\$42.33
Cement Masons	5/1/2011		\$27.71	\$15.37	\$43.08
Cement Masons	4/30/2012		\$28.41	\$15.42	\$43.83
DockBuilder/Pile Drivers (Building, Heavy & Highway)	7/1/2008		\$37.50	\$25.13	\$62.63
DockBuilder/Pile Drivers (Building, Heavy	7/1/2010		\$37.60	\$27.57	\$65.17
& Highway)  DockBuilder/Pile Drivers (Building, Heavy	7/1/2011	ř	\$38.15	\$28.27	\$66.42
& Highway)  DockBuilder/Pile Drivers Divers (Building	7/1/2010		\$45.12	\$27.57	\$72.69
Heavy & Highway) Drywall Finisher	5/1/2009		\$23.31	\$12.57	\$35.88
Drywall Finisher	5/1/2010		\$23.86	\$13.42	\$37.28
Drywall Finisher	5/1/2011		\$23.86	\$15.42	\$39.28
Drywall Finisher	5/1/2012		\$25.11	\$15.07	\$40.18
Drywall Finisher	5/1/2013		\$25.11	\$16.22	\$41.33
Drywall Finisher	5/1/2014		\$25.11	\$17.52	\$42.63
Electric Lineman	5/31/2009		\$37.27	\$15.43	\$52.70
Electric Lineman	5/31/2010		\$35.73	\$17.12	\$52.85
Electric Lineman	5/30/2011		\$36.57	\$17.34	\$53.91
Electric Lineman	11/28/2011		\$37.42	\$17.57	\$54.99
Electric Lineman	5/28/2012		\$38.30	\$17.81	\$56.11
Electric Lineman	11/26/2012	.~	\$39.18	\$18.04	\$57.22
Electric Lineman	6/3/2013		\$40.78	\$18.31	\$59.09
Electricians & Telecommunications Installation Technician	6/1/2012		\$38.53	\$14.27	\$52.80

Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Electricians & Telecommunications Installation Technician	6/1/2013		\$38.83	\$14.47	\$53.30
Electricians & Telecommunications Installation Technician	12/1/2013		\$38.92	\$14.89	\$53.81
Electricians & Telecommunications Installation Technician	6/1/2014		\$39.25	\$15.08	\$54.33
Electricians & Telecommunications Installation Technician	12/1/2014		\$39.81	\$15.28	\$55.09
Elevator Constructor	1/1/2008		\$37.85	\$16.47	\$54.32
Elevator Constructor	1/1/2010		\$40.08	\$20.24	\$60.32
Elevator Constructor	1/1/2011		\$41.33	\$25.30	\$66.63
Elevator Tender (Use Elevator Apprentice or Constructor)	1/1/2005		\$0.00	\$0.00	\$0.00
Floor Layer	5/1/2010		\$28.22	\$22.46	\$50.68
Floor Layer	5/1/2012		\$28.75	\$23.26	\$52.01
Floor Layer	5/1/2013		\$30.27	\$23.26	\$53.53
Floor Layer	5/1/2014		\$31.62	\$23.26	\$54.88
Glazier	1/1/2012		\$28.01	\$14.38	\$42.39
Glazier	5/1/2012	•	\$28.01	\$15.38	\$43.39
Glazier	6/1/2013		\$30.36	\$15.33	\$45.69
Glazier	5/1/2014		\$32.26	\$15.33	\$47.59
Glazier	5/1/2015		\$34.36	\$15.33	\$49.69
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	7/10/2010		\$33.05	\$23.00	\$56.05
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	7/1/2011		\$33.05	\$23.50	\$56.55
Iron Workers (Bridge, Structural Steel,	7/1/2012		\$33.05	\$24.00	\$57.05
Ornamental, Precast, Reinforcing) Laborers (Class 01 - See notes)	5/1/2009		\$22.80	\$11.98	\$34.78
Laborers (Class 01 - See notes)	5/1/2010		\$22.80	\$13.68	\$36.48
Laborers (Class 01 - See notes)	5/1/2011		\$22.84	\$14.39	\$37.23
Laborers (Class 01 - See notes)	5/1/2012		\$22.84	\$15.19	\$38.03
Laborers (Class 01 - See notes)	5/1/2013		\$23.24	\$15.64	\$38.88
Laborers (Class 02 - See notes)	5/1/2009		\$23.83	\$11.98	\$35.81
Laborers (Class 02 - See notes)	5/1/2010		\$23.83	\$13.68	\$37.51
Laborers (Class 02 - See notes)	5/1/2011		\$23.87	\$14.39	\$38.26
Laborers (Class 02 - See notes)	5/1/2012		\$23.87	\$15.19	\$39.06

Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Laborers (Class 02 - See notes)	5/1/2013		\$24.27	\$15.64	\$39.91
Laborers (Class 03 - See notes)	5/1/2009		\$24.15	\$11.98	\$36.13
Laborers (Class 03 - See notes)	5/1/2010		\$24.15	\$13.68	\$37.83
Laborers (Class 03 - See notes)	5/1/2011		\$23.44	\$14.39	\$37.83
Laborers (Class 03 - See notes)	5/1/2012		\$23.44	\$15.12	\$38.56
Laborers (Class 03 - See notes)	5/1/2013		\$23.94	\$15.64	\$39.58
Laborers (Class 04 - See notes)	5/1/2009		\$24.15	\$11.98	\$36.13
Laborers (Class 04 - See notes)	5/1/2010		\$24.15	\$13.68	\$37.83
Laborers (Class 04 - See notes)	5/1/2011		\$23.44	\$14.39	\$37.83
Laborers (Class 04 - See notes)	5/1/2012		\$23.44	\$15.12	\$38.56
Laborers (Class 04 - See notes)	5/1/2013		\$23.94	\$15.64	\$39.58
Laborers (Class 05 - See notes)	5/3/2009		\$26.15	\$12.11	\$38.26
Laborers (Class 05 - See notes)	5/1/2010		\$26.15	\$13.68	\$39.83
Laborers (Class 05 - See notes)	5/1/2011		\$25.44	\$14.39	\$39.83
Laborers (Class 05 - See notes)	5/1/2012		\$25.44	\$15.12	\$40.56
Laborers (Class 05 - See notes)	5/1/2013		\$25.94	\$15.64	\$41.58
Laborers (Class 06 - See notes)	5/1/2011		\$23.44	\$14.39	\$37.83
Laborers (Class 06 - See notes)	5/1/2012		\$24.19	\$15.19	\$39.38
Laborers (Class 06 - See notes)	5/1/2013	,	\$24.59	\$15.64	\$40.23
Millwright	7/1/2009		\$33.11	\$23.49	\$56.60
Millwright	7/1/2010		\$33.11	\$24.33	\$57.44
Millwright	7/1/2011		\$33.76	\$24.99	\$58.75
Millwright	7/1/2012		\$34.09	\$25.88	\$59.97
Operators (Building/Heavy, Class 01 - See Notes)	5/1/2009		\$29.42	\$16.89	\$46.31
Operators (Building/Heavy, Class 01 -	5/1/2010		\$30.76	\$17.85	\$48.61
See Notes) Operators (Building/Heavy, Class 01 -	5/1/2011		\$32.06	\$18.85	\$50.91
See Notes) Operators (Building/Heavy, Class 01 -	5/1/2012		\$32.06	\$20.25	\$52.31
See Notes) Operators (Building/Heavy, Class 01 -	5/1/2013		\$32.06	\$21.65	\$53.71
See Notes) Operators (Building/Heavy, Class 01 -	5/1/2014		\$32.70	\$22.41	\$55.11
See Notes) Operators (Building/Heavy, Class 01a -	5/1/2009		\$31.67	\$17.55	\$49.22
See Notes)					

Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Operators (Building/Heavy, Class 01a - See Notes)	5/1/2010		\$33.01	\$18.51	\$51.52
Operators (Building/Heavy, Class 01a - See Notes)	5/1/2011		\$34.31	\$19.51	\$53.82
Operators (Building/Heavy, Class 01a - See Notes)	5/1/2012		\$34.31	\$20.91	\$55.22
Operators (Building/Heavy, Class 01a - See Notes)	5/1/2013		\$34.31	\$22.31	\$56.62
Operators (Building/Heavy, Class 01a - See Notes)	5/1/2014		\$34.95	\$23.07	\$58.02
Operators (Building/Heavy, Class 02 - See Notes)	5/1/2009		\$29.13	\$16.81	\$45.94
Operators (Building/Heavy, Class 02 - See Notes)	5/1/2010		\$30.47	\$17.77	\$48.24
Operators (Building/Heavy, Class 02 - See Notes)	5/1/2011		\$31.77	\$18.77	\$50.54
Operators (Building/Heavy, Class 02 - See Notes)	5/1/2012		\$31.77	\$20.17	\$51.94
Operators (Building/Heavy, Class 02 - See Notes)	5/1/2013		\$31.77	\$21.57	\$53.34
Operators (Building/Heavy, Class 02 - See Notes)	5/1/2014		\$32.41	\$22.33	\$54.74
Operators (Building/Heavy, Class 02a - See Notes)	5/1/2009		\$31.38	\$17.48	\$48.86
Operators (Building/Heavy, Class 02a - See Notes)	5/1/2010		\$32.72	\$18.44	\$51.16
Operators (Building/Heavy, Class 02a - See Notes)	5/1/2011		\$34.02	\$19.44	\$53.46
Operators (Building/Heavy, Class 02a - See Notes)	5/1/2012		\$34.02	\$20.84	\$54.86
Operators (Building/Heavy, Class 02a - See Notes)	5/1/2013		\$34.02	\$22.24	\$56.26
Operators (Building/Heavy, Class 02a - See Notes)	5/1/2014		\$34.66	\$23.00	\$57.66
Operators (Building/Heavy, Class 03 - See Notes)	5/1/2009	٠.	\$26.22	\$15.94	\$42.16
Operators (Building/Heavy, Class 03 - See Notes)	5/1/2010		\$27.55	\$16.91	\$44.46
Operators (Building/Heavy, Class 03 - See Notes)	5/1/2011		\$28.85	\$17.91	\$46.76
Operators (Building/Heavy, Class 03 - See Notes)	5/1/2012		\$28.85	\$19.31	\$48.16
Operators (Building/Heavy, Class 03 - See Notes)	5/1/2013		\$28.85	\$20.71	\$49.56
Operators (Building/Heavy, Class 03 - See Notes)	5/1/2014		\$29.49	\$21.47	\$50.96
Operators (Building/Heavy, Class 04 - See Notes)	5/1/2009		\$25.08	\$15.61	\$40.69
Operators (Building/Heavy, Class 04 - See Notes)	5/1/2010		\$26.42	\$16.57	\$42.99
Operators (Building/Heavy, Class 04 - See Notes)	5/1/2011		\$27.72	\$17.57	\$45.29

Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Operators (Building/Heavy, Class 04 - See Notes)	5/1/2012		\$27.72	\$18.97	\$46.69
Operators (Building/Heavy, Class 04 - See Notes)	5/1/2013		\$27.72	\$20.37	\$48.09
Operators (Building/Heavy, Class 04 - See Notes)	5/1/2014		\$28.35	\$21.14	\$49.49
Operators (Building/Heavy, Class 05 - See Notes)	5/1/2009		\$24.64	\$15.47	\$40.11
Operators (Building/Heavy, Class 05 - See Notes)	5/1/2010		\$25.97	\$16.44	\$42.41
Operators (Building/Heavy, Class 05 - See Notes)	5/1/2011		\$27.27	\$17.44	\$44.71
Operators (Building/Heavy, Class 05 - See Notes)	5/1/2012		\$27.27	\$18.84	\$46.11
Operators (Building/Heavy, Class 05 - See Notes)	5/1/2013		\$27.27	\$20.24	\$47.51
Operators (Building/Heavy, Class 05 - See Notes)	5/1/2014		\$27.90	\$21.01	\$48.91
Operators (Building/Heavy, Class 06 - See Notes)	5/1/2009		\$23.76	\$15.21	\$38.97
Operators (Building/Heavy, Class 06 - See Notes)	5/1/2010		\$25.09	\$16.18	\$41.27
Operators (Building/Heavy, Class 06 - See Notes)	5/1/2011		\$26.39	\$17.18	\$43.57
Operators (Building/Heavy, Class 06 - See Notes)	5/1/2012		\$26.39	\$18.58	\$44.97
Operators (Building/Heavy, Class 06 - See Notes)	5/1/2013		\$26.39	\$19.98	\$46.37
Operators (Building/Heavy, Class 06 - See Notes)	5/1/2014	• •	\$27.02	\$20.75	\$47.77
Operators (Building/Heavy, Class 07/A - See Notes)	5/1/2009		\$35.30	\$19.38	\$54.68
Operators (Building/Heavy, Class 07/A - See Notes)	5/1/2010		\$36.91	\$20.43	\$57.34
Operators (Building/Heavy, Class 07/A - See Notes)	5/1/2011		\$38.47	\$21.53	\$60.00
Operators (Building/Heavy, Class 07/A - See Notes)	5/1/2012		\$38.47	\$23.16	\$61.63
Operators (Building/Heavy, Class 07/A - See Notes)	5/1/2013		\$38.47	\$24.79	\$63.26
Operators (Building/Heavy, Class 07/A - See Notes)	5/1/2014		\$39.24	\$25.69	\$64.93
Operators (Building/Heavy, Class 07/B - See Notes)	5/1/2009		\$34.96	\$19.27	\$54.23
Operators (Building/Heavy, Class 07/B - See Notes)	5/1/2010		\$36.56	\$20.33	\$56.89
Operators (Building/Heavy, Class 07/B - See Notes)	5/1/2011		\$38.12	\$21.43	\$59.55
Operators (Building/Heavy, Class 07/B - See Notes)	5/1/2012		\$38.12	\$23.06	\$61.18
Operators (Building/Heavy, Class 07/B - See Notes)	5/1/2013		\$38.12	\$24.69	\$62.81

Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Operators (Building/Heavy, Class 07/B - See Notes)	5/1/2014		\$38.89	\$25.59	\$64.48
Painters Class 1 (see notes)	5/1/2009		\$22.75	\$12.57	\$35.32
Painters Class 1 (see notes)	5/1/2010		\$23.30	\$13.42	\$36.72
Painters Class 1 (see notes)	5/1/2011		\$24.05	\$14.52	\$38.57
Painters Class 1 (see notes)	5/1/2012		\$24.55	\$15.07	\$39.62
Painters Class 1 (see notes)	5/1/2013		\$24.55	\$16.22	\$40.77
Painters Class 1 (see notes)	5/1/2014		\$24.55	\$17.52	\$42.07
Painters Class 2 (see notes)	5/1/2009		\$24.75	\$12.57	\$37.32
Painters Class 2 (see notes)	5/1/2010		\$25.30	\$13,42	\$38.72
Painters Class 2 (see notes)	5/1/2011		\$26.05	\$14.52	\$40.57
Painters Class 2 (see notes)	5/1/2012		\$26.55	\$15.07	\$41.62
Painters Class 2 (see notes)	5/1/2013		\$26.55	\$16.22	\$42.77
Painters Class 2 (see notes)	5/1/2014		\$26.55	\$17.52	\$44.07
Painters Class 3 (see notes)	5/1/2009		\$25.60	\$12.57	\$38.17
Painters Class 3 (see notes)	5/1/2010		\$29.60	\$13.42	\$43.02
Painters Class 3 (see notes)	5/1/2011		\$30.35	\$14.52	\$44.87
Painters Class 3 (see notes)	5/1/2012		\$30.85	\$15.07	\$45.92
Painters Class 3 (see notes)	5/1/2013	•	\$30,85	\$16.22	\$47.07
Painters Class 3 (see notes)	5/1/2014		\$30.85	\$17.52	\$48.37
Plasterers	5/1/2010		\$26.93	\$16.96	\$43.89
Plasterers	5/1/2011		\$25.68	\$20.16	\$45.84
Plasterers	5/1/2012		\$27.93	\$18.76	\$46.69
Plasterers	5/1/2013		\$27.93	\$19.61	\$47.54
Plumbers	5/1/2010		\$37.50	\$27.51	\$65.01
Plumbers	5/1/2011		\$34.50	\$26.04	\$60.54
Plumbers	5/1/2012		\$34.50	\$28.29	\$62.79
Roofers (Composition)	5/1/2009		\$30.00	\$23.10	\$53.10
Roofers (Composition)	5/1/2010		\$30.75	\$24.95	\$55.70
Roofers (Composition)	5/1/2011		\$30.75	\$25.95	\$56.70
Roofers (Composition)	5/1/2012		\$31.05	\$26.95	\$58.00

Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Roofers (Composition)	5/1/2013		\$31.05	\$28.40	\$59.45
Roofers (Shingle, Slate, Tile)	5/1/2011		\$23.75	\$15.62	\$39.37
Roofers (Shingle, Slate, Tile)	5/1/2012		\$24.00	\$16.37	\$40.37
Sheet Metal Workers	6/1/2008		\$28.98	\$27.45	\$56.43
Sheet Metal Workers	6/1/2009		\$29.56	\$29.12	\$58.68
Sheet Metal Workers	6/1/2010		\$29.59	\$29.69	\$59.28
Sheet Metal Workers	6/1/2011		\$29.59	\$30.44	\$60.03
Sheet Metal Workers	6/1/2012		\$30.61	\$30.42	\$61.03
Sign Makers and Hangars	7/1/2009		\$24.17	\$15.99	\$40.16
Sign Makers and Hangars	5/21/2010		\$24.33	\$16.37	\$40.70
Sprinklerfitters	1/1/2010		\$33.85	\$17.60	\$51.45
Sprinklerfitters	1/1/2011		\$33.35	\$18.45	\$51.80
Sprinklerfitters	4/1/2011		\$34.18	\$18.45	\$52.63
Sprinklerfitters	1/1/2012		\$34.18	\$18.60	\$52.78
Sprinklerfitters	4/1/2012		\$35.21	\$18.65	\$53.86
Sprinklerfitters	1/1/2013		\$35.21	\$18.80	\$54.01
Steamfitters	5/1/2009		\$37.76	\$25.00	\$62.76
Steamfitters	5/1/2010		\$39.36	\$26.26	\$65.62
Steamfitters	5/1/2012		\$40.38	\$26.96	\$67.34
Steamfitters	5/1/2013		\$41.41	\$27.83	\$69.24
Terrazzo Finisher	5/1/2009		\$26.54	\$14.37	\$40.91
Terrazzo Finisher	5/1/2010		\$27.89	\$14.42	\$42.31
Terrazzo Finisher	5/1/2011		\$28.14	\$14.42	\$42.56
Terrazzo Finisher	5/1/2012		\$28.57	\$14.49	\$43.06
Terrazzo Finisher	5/1/2013		\$29.07	\$14.64	\$43.71
Terrazzo Finisher	5/1/2014		\$29.66	\$14.80	\$44.46
Terrazzo Setter	5/1/2012		\$27.16	\$17.37	\$44.53
Terrazzo Setter	5/1/2013		\$27.60	\$17.58	\$45.18
Terrazzo Setter	5/1/2014		\$28.13	\$17.80	\$45.93
Tile & Marble Finisher	5/1/2011		\$22.83	\$13.21	\$36.04
Tile & Marble Finisher	5/1/2012		\$23.83	\$13.26	\$37.09

Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Tile & Marble Finisher	5/1/2013		\$24.25	\$13.44	\$37.69
Tile & Marble Finisher	5/1/2014		\$24.76	\$13.63	\$38.39
Tile & Marble Finisher	5/1/2015		\$25.37	\$13.82	\$39.19
Tile & Marble Finisher	5/1/2016		\$26.07	\$14.02	\$40.09
Tile & Marble Layer	5/1/2011		\$26.31	\$15.22	\$41.53
Tile & Marble Layer	5/1/2012		\$26.91	\$15.80	\$42.71
Tile & Marble Layer	5/1/2013		\$27.24	\$16.07	\$43.31
Tile & Marble Layer	5/1/2014		\$27.67	\$16.34	\$44.01
Tile & Marble Layer	5/1/2015		\$28.20	\$16.61	\$44.81
Tile & Marble Layer	5/1/2016		\$28.82	\$16.89	\$45.71
Truckdriver class 1(see notes)	5/1/2010		\$29.58	\$0.00	\$29.58
Truckdriver class 1(see notes)	5/1/2011		\$30.73	\$0.00	\$30.73
Truckdriver class 1(see notes)	5/1/2012		\$30.98	\$0.00	\$30.98
Truckdriver class 2 (see notes)	5/1/2010		\$29.65	\$0.00	\$29.65
Truckdriver class 2 (see notes)	5/1/2011		\$30.80	\$0.00	\$30.80
Truckdriver class 2 (see notes)	5/1/2012		\$31.05	\$0.00	\$31.05
Truckdriver class 3 (see notes)	5/1/2010		\$30.14	\$0.00	\$30.14
Truckdriver class 3 (see notes)	5/1/2011		\$31.29	\$0.00	\$31.29
Truckdriver class 3 (see notes)	5/1/2012		\$31.54	\$0.00	\$31.54

Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Carpenter - Chief of Party (Surveying & Layout)	5/1/2010		\$36.67	\$19.67	\$56.34
Carpenter - Chief of Party (Surveying & Layout)	11/1/2010		\$34.09	\$20.17	\$54.26
Carpenter - Chief of Party (Surveying & Layout)	5/1/2011		\$34.20	\$21.47	\$55.67
Carpenter - Chief of Party (Surveying & Layout)	5/1/2012		\$35.93	\$22.14	\$58.07
Carpenter - Chief of Party (Surveying & Layout)	5/1/2013		\$36.85	\$22.14	\$58.99
Carpenter - Chief of Party (Surveying & Layout)	5/1/2014		\$37.94	\$22.14	\$60.08
Carpenter - Chief of Party (Surveying & Layout)	5/1/2015		\$39.03	\$22.14	\$61.17
Carpenter - Instrument Person (Surveying & Layout)	5/1/2010		\$33.34	\$19.67	\$53.01
Carpenter - Instrument Person (Surveying & Layout)	11/1/2010		\$30.99	\$20.17	\$51.16
Carpenter - Instrument Person (Surveying & Layout)	5/1/2011		\$31.09	\$21.47	\$52.56
Carpenter - Instrument Person (Surveying & Layout)	5/1/2012		\$31.24	\$22.14	\$53.38
Carpenter - Instrument Person (Surveying & Layout)	5/1/2013		\$32.04	\$22.14	\$54.18
Carpenter - Instrument Person (Surveying & Layout)	5/1/2014	<b>,</b>	\$32.99	\$22.14	\$55.13
Carpenter - Instrument Person (Surveying & Layout)	5/1/2015		\$33.94	\$22.14	\$56.08
Carpenter - Rodman (Surveying & Layout)	5/1/2010		\$24.00	\$19.67	\$43.67
Carpenter - Rodman (Surveying & Layout)	11/1/2010		\$22.31	\$20.17	\$42.48
Carpenter - Rodman (Surveying & Layout)	5/1/2011		\$22.38	\$21.47	\$43.85
Carpenter - Rodman (Surveying & Layout)	5/1/2012		\$22.49	\$22.14	\$44.63
Carpenter - Rodman (Surveying & Layout)	5/1/2013		\$23.07	\$22.14	\$45.21
Carpenter - Rodman (Surveying & Layout)	5/1/2014		\$23.75	\$22.14	\$45.89
Carpenter - Rodman (Surveying & Layout)	5/1/2015		\$24.44	\$22.14	\$46.58
Carpenters	5/1/2011		\$31.09	\$21.47	\$52.56
Carpenters	5/1/2012		\$31.24	\$22.14	\$53.38
Carpenters	5/1/2013		\$32.04	\$22.14	\$54.18
Carpenters	5/1/2014		,\$32.99	\$22.14	\$55.13
Carpenters	5/1/2015		\$33.94	\$22.14	\$56.08
Laborers (Class 01 - See notes)	5/1/2009		\$16.22	\$11.03	\$27.25
Laborers (Class 01 - See notes)	5/1/2010		\$16.77	\$11.88	\$28.65

Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Laborers (Class 01 - See notes)	5/1/2011		\$17.32	\$12.78	\$30.10
Laborers (Class 01 - See notes)	5/1/2012		\$17.71	\$13.39	\$31.10
Laborers (Class 01 - See notes)	5/1/2013		\$18.16	\$14.04	\$32.20
Laborers (Class 01 - See notes)	5/1/2014		\$18.66	\$14.69	\$33.35
Laborers (Class 01 - See notes)	5/1/2015		\$19.21	\$15.34	\$34.55
Laborers (Class 02 - See notes)	5/1/2009		\$22.84	\$11.03	\$33.87
Laborers (Class 02 - See notes)	5/1/2010		\$23.39	\$11.88	\$35.27
Laborers (Class 02 - See notes)	5/1/2011		\$23.94	\$12.78	\$36.72
Laborers (Class 02 - See notes)	5/1/2012		\$24.33	\$13.39	\$37.72
Laborers (Class 02 - See notes)	5/1/2013		\$24.78	\$14.04	\$38.82
Laborers (Class 02 - See notes)	5/1/2014		\$25.28	\$14.69	\$39.97
Laborers (Class 02 - See notes)	5/1/2015		\$25.83	\$15.34	\$41.17
Laborers (Class 03 - See notes)	5/1/2009		\$19.83	\$11.03	\$30.86
Laborers (Class 03 - See notes)	5/1/2010		\$20.38	\$11.88	. \$32.26
Laborers (Class 03 - See notes)	5/1/2011	•	\$20.93	\$12.78	\$33.71
Laborers (Class 03 - See notes)	5/1/2012		\$21.32	\$13.39	\$34.71
Laborers (Class 03 - See notes)	5/1/2013		\$21.77	\$14.04	\$35.81
Laborers (Class 03 - See notes)	5/1/2014		\$22.27	\$14.69	\$36.96
Laborers (Class 03 - See notes)	5/1/2015		\$22.82	\$15.34	\$38.16
Laborers (Class 04 - See notes)	5/1/2009		\$20.18	\$11.03	\$31.21
Laborers (Class 04 - See notes)	5/1/2010		\$20.73	\$11.88	\$32.61
Laborers (Class 04 - See notes)	5/1/2011		\$21.28	\$12.78	\$34.06
Laborers (Class 04 - See notes)	5/1/2012		\$21.67	\$13.39	\$35.06
Laborers (Class 04 - See notes)	5/1/2013		\$22.12	\$14.04	\$36.16
Laborers (Class 04 - See notes)	5/1/2014		\$22.62	\$14.69	\$37.31
Laborers (Class 04 - See notes)	5/1/2015		\$23.17	\$15.34	\$38.51
Laborers (Class 05 - See notes)	5/1/2009		\$20.85	\$11.03	\$31.88
Laborers (Class 05 - See notes)	5/1/2010		\$21.40	\$11.88	\$33.28
Laborers (Class 05 - See notes)	5/1/2011		\$21.95	\$12.78	\$34.73
Laborers (Class 05 - See notes)	5/1/2012		\$22.34	\$13.39	\$35.73
Laborers (Class 05 - See notes)	5/1/2013		\$22.79	\$14.04	\$36.83

Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Laborers (Class 05 - See notes)	5/1/2014		\$23.29	\$14.69	\$37.98
Laborers (Class 05 - See notes)	5/1/2015		\$23.84	\$15.34	\$39.18
Laborers (Class 06 - See notes)	5/1/2009		\$20.27	\$11.03	\$31.30
Laborers (Class 06 - See notes)	5/1/2010		\$20.82	\$11.88	\$32.70
Laborers (Class 06 - See notes)	5/1/2011		\$21,37	\$12.78	\$34.15
Laborers (Class 06 - See notes)	5/1/2012		\$21.76	\$13.39	\$35.15
Laborers (Class 06 - See notes)	5/1/2013		\$22.21	\$14.04	\$36.25
Laborers (Class 06 - See notes)	5/1/2014		\$22.71	\$14.69	\$37.40
Laborers (Class 06 - See notes)	5/1/2015		\$23.26	\$15.34	\$38.60
Laborers (Class 07 - See notes)	5/1/2009		\$20.56	\$11.03	\$31.59
Laborers (Class 07 - See notes)	5/1/2010		\$21.11	\$11.88	\$32.99
Laborers (Class 07 - See notes)	5/1/2011		\$21.66	\$12.78	\$34.44
Laborers (Class 07 - See notes)	5/1/2012		\$22.05	\$13.39	\$35.44
Laborers (Class 07 - See notes)	5/1/2013		\$22.50	\$14.04	\$36.54
Laborers (Class 07 - See notes)	5/1/2014		\$23.00	\$14.69	\$37.69
Laborers (Class 07 - See notes)	5/1/2015		\$23.55	\$15.34	\$38.89
Laborers (Class 08 - See notes)	5/1/2009		\$21.04	\$11.03	\$32.07
Laborers (Class 08 - See notes)	5/1/2010		\$21.59	\$11.88	\$33.47
Laborers (Class 08 - See notes)	5/1/2011		\$22.14	\$12.78	\$34.92
Laborers (Class 08 - See notes)	5/1/2012		\$22.53	\$13.39	\$35.92
Laborers (Class 08 - See notes)	5/1/2013		\$22.98	\$14.04	\$37.02
Laborers (Class 08 - See notes)	5/1/2014		\$23.48	\$14.69	\$38.17
Laborers (Class 08 - See notes)	5/1/2015		\$24.03	\$15.34	\$39.37
Operators (Highway, Class 01 - See	5/1/2009		\$27.45	\$16.30	\$43.75
Notes) Operators (Highway, Class 01 - See Notes)	5/1/2010		\$28.79	\$17.26	\$46.05
Operators (Highway, Class 01 - See Notes)	5/1/2011		\$30.09	\$18.26	\$48.35
Operators (Highway, Class 01 - See	5/1/2012		\$30.09	\$19.51	\$49.60
Notes) Operators (Highway, Class 01 - See Notes)	5/1/2013		\$30.09	\$20.76	\$50.85
Operators (Highway, Class 01 - See Notes)	5/1/2014		\$30.38	\$21.72	\$52.10
Operators (Highway, Class 01a - See Notes)	5/1/2009		\$29.70	\$16.98	\$46.68

Page 12 of 15

Serial Number: 13-04256

Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Operators (Highway, Class 01a - See Notes)	5/1/2010		\$31.04	\$17.94	\$48.98
Operators (Highway, Class 01a - See Notes)	5/1/2011		\$32.34	\$18.94	\$51.28
Operators (Highway, Class 01a - See Notes)	5/1/2012		\$32.34	\$20.19	\$52.53
Operators (Highway, Class 01a - See Notes)	5/1/2013		\$32.34	\$21.44	\$53.78
Operators (Highway, Class 01a - See Notes)	5/1/2014		\$32.63	\$22.40	\$55.03
Operators (Highway, Class 02 - See Notes)	5/1/2009		\$26.27	\$15.96	\$42.23
Operators (Highway, Class 02 - See Notes)	5/1/2010		\$27.61	\$16.92	\$44.53
Operators (Highway, Class 02 - See Notes)	5/1/2011		\$28.91	\$17.92	\$46.83
Operators (Highway, Class 02 - See Notes)	5/1/2012		\$28.91	\$19.17	\$48.08
Operators (Highway, Class 02 - See Notes)	5/1/2013		\$28.91	\$20.42	\$49.33
Operators (Highway, Class 02 - See Notes)	5/1/2014		\$29.21	\$21.37	\$50.58
Operators (Highway, Class 03 - See Notes)	5/1/2009		\$25.58	\$15.75	\$41.33
Operators (Highway, Class 03 - See Notes)	5/1/2010		\$26.91	\$16.72	\$43.63
Operators (Highway, Class 03 - See Notes)	5/1/2011		\$28.21	\$17.72	\$45.93
Operators (Highway, Class 03 - See Notes)	5/1/2012		\$28.21	\$18.97	\$47.18
Operators (Highway, Class 03 - See Notes)	5/1/2013		\$28.21	\$20.22	\$48.43
Operators (Highway, Class 03 - See Notes)	5/1/2014		\$28.50	\$21.18	\$49.68
Operators (Highway, Class 04 - See Notes)	5/1/2009		\$25.13	\$15.62	\$40.75
Operators (Highway, Class 04 - See Notes)	5/1/2010		\$26.46	\$16.59	\$43.05
Operators (Highway, Class 04 - See Notes)	5/1/2011		\$27.76	\$17.59	\$45.35
Operators (Highway, Class 04 - See Notes)	5/1/2012		\$27.75	\$18.85	\$46.60
Operators (Highway, Class 04 - See Notes)	5/1/2013		\$27.75	\$20.10	\$47.85
Operators (Highway, Class 04 - See Notes)	5/1/2014		\$28.05	\$21.05	\$49.10
Operators (Highway, Class 05 - See Notes)	5/1/2009		\$24.62	\$15.47	\$40.09
Operators (Highway, Class 05 - See Notes)	5/1/2010		\$25.95	<b>\$16.44</b>	\$42.39
Operators (Highway, Class 05 - See Notes)	5/1/2011		\$27.25	\$17.44	\$44.69

Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Operators (Highway, Class 05 - See Notes)	5/1/2012		\$27.25	\$18.69	\$45.94
Operators (Highway, Class 05 - See Notes)	5/1/2013		\$27.25	\$19.94	\$47.19
Operators (Highway, Class 05 - See Notes)	5/1/2014		\$27.54	\$20.90	\$48.44
Operators (Highway, Class 06 - See Notes)	5/1/2009		\$27.69	\$16.36	\$44.05
Operators (Highway, Class 06 - See	5/1/2010		\$29.03	\$17.32	\$46.35
Notes) Operators (Highway, Class 06 - See	5/1/2011		\$30.33	\$18.32	\$48.65
Notes) Operators (Highway, Class 06 - See	5/1/2012		\$30.33	\$19.57	\$49.90
Notes) Operators (Highway, Class 06 - See Notes)	5/1/2013		\$30.33	\$20.82	\$51.15
Operators (Highway, Class 06 - See	5/1/2014		\$30.62	\$21.78	\$52.40
Notes) Operators (Highway, Class 06/A - See	5/1/2009		\$29.94	\$17.02	\$46.96
Notes) Operators (Highway, Class 06/A - See	5/1/2010		\$31.28	\$17.98	\$49.26
Notes) Operators (Highway, Class 06/A - See	5/1/2011		\$32.58	\$18.98	\$51.56
Notes) Operators (Highway, Class 06/A - See	5/1/2012		\$32.59	\$20.23	\$52.82
Notes) Operators (Highway, Class 06/A - See	5/1/2013		\$32.58	\$21.48	\$54.06
Notes) Operators (Highway, Class 06/A - See	5/1/2014		\$32.87	\$22.44	\$55.31
Notes) Operators (Highway, Class 07/A - See	5/1/2009		\$32.94	\$18.67	\$51.61
Notes) Operators (Highway, Class 07/A - See	5/1/2010	· .	\$34.55	\$19.72	\$54.27
Notes) Operators (Highway, Class 07/A - See	5/1/2011		\$36.10	\$20.83	\$56.93
Notes) Operators (Highway, Class 07/A - See	5/1/2012		\$36.10	\$22.28	\$58.38
Notes) Operators (Highway, Class 07/A - See	5/1/2013		\$36.10	\$23.73	\$59.83
Notes) Operators (Highway, Class 07/A - See	5/1/2014		\$36.45	\$24.88	\$61.33
Notes) Operators (Highway, Class 07/B - See Notes)	5/1/2009		\$31.53	\$18.25	\$49.78
Operators (Highway, Class 07/B - See	5/1/2010		\$33.13	\$19.31	\$52.44
Notes) Operators (Highway, Class 07/B - See	5/1/2011		\$34.69	\$20.41	\$55.10
Notes) Operators (Highway, Class 07/B - See	5/1/2012		\$34.69	\$21.86	\$56.55
Notes) Operators (Highway, Class 07/B - See	5/1/2013		\$34.69	\$23.31	\$58.00
Notes)				* * *	

Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Operators (Highway, Class 07/B - See Notes)	5/1/2014		\$35.04	\$24.46	\$59.50
Steamfitters (Heavy and Highway - Gas Distribution)	5/1/2010		\$30.27	\$26.09	\$56.36
Steamfitters (Heavy and Highway - Gas Distribution)	5/1/2012		\$34.87	\$26.86	\$61.73
Steamfitters (Heavy and Highway - Gas Distribution)	5/1/2013		\$36.02	\$27.73	\$63.75
Truckdriver class 1(see notes)	5/1/2010		\$29.58	\$0.00	\$29.58
Truckdriver class 1(see notes)	5/1/2011		\$30.73	\$0.00	\$30.73
Truckdriver class 1(see notes)	5/1/2012		\$30.98	\$0.00	\$30.98
Truckdriver class 2 (see notes)	5/1/2010	Ç	\$29.65	\$0.00	\$29.65
Truckdriver class 2 (see notes)	5/1/2011		\$30.80	\$0.00	\$30.80
Truckdriver class 2 (see notes)	5/1/2012		\$31.05	\$0.00	\$31.05
Truckdriver class 3 (see notes)	5/1/2010		\$30.14	\$0.00	\$30.14
Truckdriver class 3 (see notes)	5/1/2011		\$31.29	\$0.00	\$31.29
Truckdriver class 3 (see notes)	5/1/2012		\$31.54	\$0.00	\$31.54

#### Notes:

If you can not find a classification under Heavy/Highway please refer to the Building classifications.

For further information on construction types review the "Notes as Referenced in Predeterminations" on the Labor and Industry Website. Go to www.dli.state.pa.us, scroll down to the picture labeled "Labor Law Compliance" and click the picture. Then scroll down on the left menu and click on the "Prevailing Wage" link.

Page 15 of 15 Serial Number: 13-04256

# STATEMENT OF APPROXIMATE QUANTITIES PROJECT NO. ST-13-C04 BASE BID

ITEM	DESCRIPTION	QUANTITY
1.	Excavation	1,072 SF
2.	25 mm Superpave Asphalt Base (4")	1,072 SF
. 3.	2A Crushed Stone Aggregate Subbase (4")	1,072 SF
4.	24" Brick Sidewalk (Installed & Sanded)	1,072 SF

The above quantities are approximate and are given only as a uniform comparison of bids. The City reserves the right to increase or decrease the amount of any item as may be deemed necessary and in the best interest of the City of Bethlehem.

# STATEMENT OF APPROXIMATE QUANTITIES PROJECT NO. ST-13-C04 ALTERNATE BID

ITEM		DESCRIPTION	QUANTITY
1.	Street	Trees	2 EA

The above quantities are approximate and are given only as a uniform comparison of bids. The City reserves the right to increase or decrease the amount of any item as may be deemed necessary and in the best interest of the City of Bethlehem.

# PROPOSAL TO THE CITY OF BETHLEHEM DEPARTMENT OF PUBLIC WORKS BETHLEHEM, PENNSYLVANIA

2. The official name and business address of the Bidder, as maker of this Proposal is as follows:  Name  Business Address  Telephone #(	1.	For the construction of
Name  Business Address  Telephone #() Fax #()  Type of Business: Individual  Partnership  Corporation  3. The full name and home address of all persons, partners, corporations and/or other parties, as principals, who have an interest in the Bidder, as maker of this Proposal, are a follows:  NAME  ADDRESS  4. The name and title of the person authorized to make and endorse this Proposal on behalf of the Bidder, as maker of this Proposal, is as follows:  Name  Title  Date		
Telephone #(	2.	The official name and business address of the Bidder, as maker of this Proposal is as follows:
Telephone # Fax # Type of Business: Individual  Partnership  Corporation  3. The full name and home address of all persons, partners, corporations and/or other parties, as principals, who have an interest in the Bidder, as maker of this Proposal, are a follows:  NAME  ADDRESS  4. The name and title of the person authorized to make and endorse this Proposal on behalf of the Bidder, as maker of this Proposal, is as follows:  Name  Title  Date		Name
Type of Business: Individual  Partnership Corporation  3. The full name and home address of all persons, partners, corporations and/or other parties, as principals, who have an interest in the Bidder, as maker of this Proposal, are a follows:  NAME ADDRESS  4. The name and title of the person authorized to make and endorse this Proposal on behalf of the Bidder, as maker of this Proposal, is as follows:  Name Title Date		Business Address
Type of Business: Individual  Partnership Corporation  3. The full name and home address of all persons, partners, corporations and/or other parties, as principals, who have an interest in the Bidder, as maker of this Proposal, are a follows:  NAME ADDRESS  4. The name and title of the person authorized to make and endorse this Proposal on behalf of the Bidder, as maker of this Proposal, is as follows:  Name Title Date		Telephone # ( ) Fax # ( )
Partnership Corporation  3. The full name and home address of all persons, partners, corporations and/or other parties, as principals, who have an interest in the Bidder, as maker of this Proposal, are as follows:  NAME ADDRESS  4. The name and title of the person authorized to make and endorse this Proposal on behalf of the Bidder, as maker of this Proposal, is as follows:  Name Title Date		
3. The full name and home address of all persons, partners, corporations and/or other parties, as principals, who have an interest in the Bidder, as maker of this Proposal, are a follows:  NAME  ADDRESS  4. The name and title of the person authorized to make and endorse this Proposal on behalf of the Bidder, as maker of this Proposal, is as follows:  Name  Title  Date		
an interest in the Bidder, as maker of this Proposal, are as follows:  NAME  ADDRESS  NAME  ADDRESS   The name and title of the person authorized to make and endorse this Proposal on behalf of the Bidder, as maker of this Proposal, is as follows:  Name  Title  Date		Corporation
The name and title of the person authorized to make and endorse this Proposal on behalf of the Bidder, as maker of this Proposal, is as follows:  Name  Title  Date		an interest in the Bluder, as many follows:  ADDRESS
endorse this Proposal on Some this Proposal, is as follows:  Name  Title  Date  Date		INAME
endorse this Proposal on Some this Proposal, is as follows:  Name  Title  Date  Date		
endorse this Proposal on Some this Proposal, is as follows:  Name  Title  Date  Date		
endorse this Proposal on Some this Proposal, is as follows:  Name  Title  Date  Date		
Title Date	4.	this Proposal, is as follows:
Date		
1 ID No		Title
5. Federal ID No.		Date
	5.	Federal ID No.

#### BIDDER'S DECLARATION

The party named on the preceding page, as Bidder, declares that the only person or persons, firm, partnership, jointventure or corporation, interested in this bid as principal or principals is or are named above, and that no others than hereinabove named have any interest in this bid or in the Contract proposed to be taken; that this bid is made without any connection with any other person or persons, firm, partnership, joint-venture or corporation making a bid for the same purpose; that the bid is in all respects fair and without collusion or fraud, and that no officer or employee of the City of Bethlehem is, shall be or become directly or indirectly interested as contracting party, partner, stockholder, surety or otherwise in the performance of the Contract, or in the supplies, work, or business to which it relates, or in any portion of the profits therefrom; that he is not in arrears to the City of Bethlehem upon debt or contract, nor in default as surety or otherwise, upon any obligation to the City of Bethlehem; that he has examined the site of the proposed work, the form of contract approved by the Owner's Solicitor, specifications and drawings therein referred to, and all addenda issued by the and has read and understands the advertisement, the Information for Bidders hereto attached and the proposed form of performance bond; and he declares that, in regard to the conditions affecting the work to be done and the labor and materials needed, he has made his own investigations and research, and although he examined such borings, plans, surveys, measurements, dimensions, calculations, estimates, and representatives which may have been made by or on behalf of any employee, officers, or agents of the Owner, he acknowledges that they have been furnished to him to make such use as he wishes but without any representation as to their accuracy, and has made allowances in his bid for the fact that there is no expressed or implied guarantee that they are accurate, comprehensive, or correctly interpreted and agree in no event to make any claim for damages, should any of them be incorrect or incomplete; and he proposes and agrees, if this bid be accepted, that he will contract, in the form so approved, to perform all the work mentioned in said approved form of contract and specifications, and that he will accept in full payment therefore the following lump sums and unit prices to wit:

OFFICIAL SIGNATURE	OF BIDDER
PRINTED NAME OF	BIDDER
DATE	

# PROJECT NO. ST-13-C04 BASE BID

ITEM	QUANTI	TY DESCRIPTION	UNIT PRICE	TOTAL
1.	1,072 SF	Excavation	<del>-</del>	
2.	1,072 SF	25 mm Superpave Asphalt Base (4")		
3.	1,072 SF	2A Crushed Stone Aggregate Subbase(4")		
4.	1,072 SF	2¼" Brick Sidewalk (Installed & Sanded)		· · · · · · · · · · · · · · · · · · ·
	Tota	l of BASE BID Items 1 thru 4		

The above quantities are approximate and are given only as a uniform comparison of bids. The City reserves the right to increase or decrease the amount of any item as may be deemed necessary and in the best interest of the City of Bethlehem.

# PROPOSAL PROJECT NO. ST-13-C04 ALTERNATE BID

ITEM	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL
1.	2 EA	Street Trees		
	Total of A	LTERNATE BID Item 1		

The above quantities are approximate and are given only as a uniform comparison of bids. The City reserves the right to increase or decrease the amount of any item as may be deemed necessary and in the best interest of the City of Bethlehem.

### PROPOSAL PROJECT NO. ST-13-C04

The City reserves the right to award the Contract to the lowest responsible bidder.

ADDENDUM NO.	RECEIVED ON (DA	TE) RECEIVED BY (SIGNATURE)
<u> </u>		
· · · · · · · · · · · · · · · · · · ·		
·		·
	,	
		OFFICIAL SIGNATURE OF BIDDER
		DETAILS MAKE OF DIDDER
		PRINTED NAME OF BIDDER
		mrmr p
		TITLE
		DAME
		DATE.

#### CITY OF BETHLEHEM

All bids submitted for City contracts put out for competitive bid require the completion of the following affidavit. This is per the Mayor's Administrative Order No. 629, dated August 3, 1993.

#### "NON-COLLUSION AFFIDAVIT

	(Name of Bidder), the undersigned
bidder, avers that he/she/it has no for any act prohibited by State or involving conspiracy or collusion w public contract within the last thr	Federal law, in any jurisdiction, with respect to bidding on any
Further, currently under debarment by the Pe Industry as advertised in the Penns	
	Bidder Signature
VERIFI	CATION
I, Bidder) verify that the statements correct to the best of my knowledge understand that false statements he penalties of 18 Pa. C.S. Section 49 falsification to authorities.	e, information and belief. I erein are made subject to the
	Signature
Dated: "	

## CITY OF BETHLEHEM{PRIVATE} CONSTRUCTION CONTRACT AGREEMENT

1. <u>AGREEMENT</u> : This Contract is made this day of, 20,
between, Party of the First Part, hereafter referred to as the "Contractor," and the CITY OF
BETHLEHEM, a municipal corporation and City of the Third Class of the Commonwealth of
Pennsylvania, domiciled in and with its principal offices and place of business situated at 10 East
Church Street, Bethlehem, Northampton County, Pennsylvania, 18018, Party of the Second Part,
hereafter referred to as the "City." The parties agree that the following terms and conditions shall
govern this Agreement, as set forth herein below in this Section, and as set forth hereinafter in
other sections of this Agreement:

- (a) <u>City Project Number</u>: The City's Project Number for the work covered by this Agreement is ----.
- (b) <u>Completion Time</u>: The Contractor agrees to complete this work within --- consecutive calendar days from the date of the Notice to Proceed.
- (c) <u>Contract Sum</u>: The total sum of unit prices for all work required in this Agreement is and shall not exceed the sum of ----.
- 2. <u>SCOPE OF THE WORK</u>: Contractor will furnish all labor, equipment, materials, scaffolding if applicable, building permits if applicable, hoisting if applicable, transportation, supervision, coordination, communication, shop drawings and storage to complete in a first-class and workmanlike manner all of the work shown on the Drawings and described in City's Specifications and City's Project Number, under the direction and supervision of City's Engineer and/or the City's assigned Independent Design Engineer/Architect (the City's Engineer and the City's Independent Design Engineer/Architect are collectively hereafter referred to as the "City's Engineer"), and shall do everything required by this Agreement, the Specifications, Drawings, City's Project Number and Contractor's Bid Proposal for said Project.
- 2.1 <u>APPROVALS BY CITY ENGINEER</u>: Unless otherwise expressly provided in the Contract Drawings, Specifications and Addenda, the work must be performed in accordance with the best modern practice, with materials and workmanship of the highest quality, all as determined by, and entirely to the satisfaction of the City's Engineer. Where equipment,

materials or articles are referred to in the Specifications as "equal to" any particular standard, City's Engineer shall decide the question of equality. When, and to the extent required by the specifications, or as required by City's Engineer, Contractor shall furnish to City's Engineer, for his approval, full information concerning the materials or articles which Contractor contemplates incorporating in the work, and samples of the materials shall be submitted to City's Engineer, for approval, whenever required by him. Machinery, equipment, materials and articles installed without such approval, shall be at the risk of subsequent rejection.

- 3. <u>TIME FOR COMPLETION OF WORK</u>: The work to be performed under this Contract shall be commenced on a date to be specified in a written "Notice to Proceed" from City's Engineer to Contractor. The Contractor agrees to complete this work within that number of consecutive calendar days set forth hereinabove in Section 1(b) from the date of the Notice to Proceed. In the event that the Contractor fails to complete the work within said deadline; the Contractor agrees to become liable for any and all liquidated damages that are imposed by the City pursuant to the provisions hereof.
- 2.1 LIQUIDATED DAMAGES: It is agreed that any delay in the completion of the Project would cause the City to suffer damages, but that those damages would be extremely difficult and impracticable to precisely compute, and therefore the parties have agreed that a reasonable measure of such damages is the sum of \$500.00 per calendar day, which sum the Contractor will pay to the City for each calendar day of delay in the completion of the Project that is not excused by an extension of time granted by the City under the provisions of this Contract. This amount is estimated by City and Contractor to be a reasonable approximation of the City's actual damages, and is agreed to as liquidated damages and not as a penalty. The City may deduct and retain the amount of such liquidated damages out of the monies which may be due or become due to the Contractor under this Agreement.
- 4. THE CONTRACT SUM: City shall pay Contractor for the furnishing of all materials, equipment and the performance, complete, of all work referred to herein, subject to any additions or deductions provided herein, or which may hereafter be required or provided for by City, in current funds, a sum not to exceed the aggregate of the unit prices for said work as submitted in Contractor's proposal as set forth hereinabove in Section 1(c).
  - 5. <u>PAYMENTS</u> Payments shall be made by City to Contractor in the following

manner:

- (a) Payments and Retainage: Until fifty percent (50%) of the contract is completed, on or about the 15th day of each month ninety percent (90%) of the value, and after fifty percent (50%) of the contract is completed, ninety-five percent (95%) of the value, said value being based on the contract prices of labor and materials incorporated in the work being contemplated under this contract up to the first day of that month, as estimated by City's Engineer, shall be paid to Contractor, but no payment whatever, or any time, shall be demanded or due, except under the written Certificates of City's Engineer to the effect that such payments have become due, and such Certificates shall, in every instance, be a condition precedent to the right to require payments, and the City's Engineer's decision thereon shall be final. The balance shall be held by the City as retainage.
- (b) Additional Retainage in Disputes: In the event a dispute arises between City and Contractor, which dispute is based upon increased costs claimed by Contractor to be occasioned by delays or other actions of another contractor or otherwise, additional retainage in the sum of one and one half (1 1/2) times the amount of any possible liability may be withheld until such time as a final resolution is agreed to by all parties directly or indirectly involved, unless the contractor causing the additional claim furnishes a bond satisfactory to City to indemnify City against the claim. All such monies retained by City may be withheld from Contractor until substantial completion of the Contract.
- (c) Final Payment: Any payment or payments due Contractor by City shall not bind City to the acceptance of the work performed. The final payment representing retained percentages, shall be made within thirty (30) days following the date of substantial completion of the work included in this Contract, in the manner, form, and time required by this Contract, and the approval and acceptance thereby of City, providing Contractor has submitted, upon request, to City's Engineer, evidence satisfactory to the Engineer that all payrolls, materials, bills and other indebtedness connected with the work have been paid, and that Contractor has executed and delivered to City a Maintenance Bond, with approved corporate surety, to be approved by the City Solicitor, to indemnify and hold harmless City from all damages arising out of defective materials and/or workmanship for a period of one (1) year from the date of completion, approval and acceptance of the work provided for in this Contract. Provided, however, that City may

retain one and one half (1 1/2) times such amount as is required to complete any then remaining, uncompleted minor items, which amount shall be certified by City Engineer.

- (d) <u>Substantial Completion Definition</u>: Substantial completion shall mean construction that is sufficiently completed in accordance with the contract documents and certified by City Engineer, as modified by Change Orders agreed to by the parties, so that the project can be used, occupied or operated for its intended use. In no event shall a project be certified as substantially complete unless at least ninety (90%) percent of the work on the project is completed.
  - 6. <u>BONDS</u> Contractor shall furnish City with
- (a) <u>Performance Bond</u>: A bond with approved surety, in an amount equal to one hundred percent (100%) of the total contract price, to guarantee the performance of the work, and to indemnify and save City harmless because of Contractor's default in this respect. The Bonding Company must have a rating of B+, A-, A or A+ as determined by Best's Rating Services or an equivalent agency.
- (b) <u>Labor and Material Payment Bond</u>: A separate bond, with approved corporate surety, in an amount equal to one hundred percent (100%) of the total contract price, to secure the payment of all material furnished, and all labor performed, under the terms hereof; and
- (c) <u>Maintenance Bond</u>: A maintenance bond, in an amount equal to ten percent (10%) of the total sum of monies due and owing to Contractor by virtue of this Agreement and any additions thereto, or in the amount of One Thousand Dollars (\$1,000.00), whichever amount is the larger sum, to indemnify and save harmless City against all loss or damage arising out of defective materials or workmanship for a period of one (1) year from the date of the completion, approval and acceptance of the Contractor's work by the City. Upon approval of said bond by City's Solicitor, and the filing of same in the Solicitor's Office, City covenants and agrees, within thirty (30) days thereafter, to pay to the Contractor all sums of money retained by City and designated by the parties herein as "retained percentages". If Contractor does not wish to post a one (1) year maintenance bond with City, he must state this, in writing, at the time of the signing of this Contract. If this is the case, the City will retain an amount equal to ten percent (10%) of the total contract sum as the "retained percentage" designated by the parties herein until such time as the one year maintenance period expires and

can be authorized to be released and paid to the Contractor.

#### 7. <u>CONTRACTOR'S COVENANTS</u>

- (a) <u>Labor and Materials</u>: The Contractor covenants and agrees that all of the materials furnished by Contractor and used on the work herein provided shall be of the very best quality; that all of the work performed shall be executed in the most skillful and workmanlike manner; that all work called for by the Drawings, Specifications, and this Contract, though every item is not particularly shown on the first, nor mentioned in the second, shall be executed and performed as though such work were particularly shown and mentioned in each respectively, unless otherwise specifically provided; that Contractor will make any omissions from, or additions to, the work or materials herein provided for, whenever required by City, the valuation of such work and materials, if not agreed upon, to be determined on the basis of the Contract unit prices of materials and the work referred to, or in the absence of such unit of value, on prevailing market rates, which market rates, in case of dispute, are to be determined by City's Engineer, whose decision, with reference thereto, shall be binding upon the Contractor and City; and that no claims for damages on account of such changes, or for anticipated profits, shall be made or allowed.
- (b) <u>Change Orders In Written Form Only</u>: Contractor covenants and agrees that no claims for compensation for extra and/or additional materials or work are to be made or allowed, unless the same be specifically agreed upon by change order, in writing, by City, and that no additions to, or omissions from, the work herein specifically provided for; shall make void or affect the other provisions or covenants of this contract. The difference in the cost thereby occasioned, as the case may be, shall be added to, or deducted from, the amount of the contract. In the absence of an express agreement, or provision, to the contrary, no addition to or omission from, the work herein specifically provided for shall be construed to extend the time fixed herein for the final completion of the work.
- (c) <u>Changes in Quantity of Work Hardship</u>: Contractor further covenants and agrees that where quantities originally contemplated are so changed that application of the agreed price to the quantity of work performed is shown to create a substantial hardship to the City or to Contractor, there shall be an equitable adjustment of the Contract to prevent such hardship, which adjustment shall be subject to mutual agreement of the parties and must be

agreed to, in writing, to be binding on the City.

- (d) <u>Inspections By City</u>: Contractor covenants and agrees that all of the materials furnished by Contractor, and the work done under this Contract by Contractor, shall be subject to the inspection of City's Engineer, and such Assistants as he may designate, with the right to reject any and all work, or materials furnished, not in accordance with this contract, and the decision of City's Engineer, as to quality and quantity, shall be final.
- (e) <u>Defective Work</u>: Contractor covenants and agrees that Contractor will, at Contractor's own expense, within a reasonable time to be specified by City's Engineer, remedy or remove any defective or unsatisfactory materials furnished, or work performed, and that in the event of the Contractor's failure immediately to proceed and faithfully continue so to do, City may have the same done, and charge the cost thereof to the account of Contractor.
- (f) No Waivers by City: Contractor covenants and agrees that until final inspection and acceptance of, and payment for, all of the materials furnished by Contractor, and the work herein provided for, no prior inspection, payment or act is to be construed as a waiver of the right of City to reject any defective work or materials furnished by Contractor, or to require the fulfillment of any of the terms of this Contract.
- shall fail to complete the work herein contracted for, or any part thereof, in accordance with this Contract, within the time herein provided for, or shall fail to prosecute said work with such diligence as, in the judgment of City's Engineer, will insure the completion of said work within the time provided for by the City's Engineer, City may withhold all payments for work in place until final completion and acceptance of the same, and City is authorized and empowered, after five (5) days due notice, in writing, served personally upon, or left at the shop, office, or usual place of abode of Contractor, or Contractor's agent, and Contractor having failed to take such action within said five (5) days as will, in the judgment of City's Engineer remedy the default for which said notice was given, City may in its sole discretion terminate this Contract and/or take possession of the work in whole or in part, and, of all machinery and tools employed thereon, and all materials belonging to Contractor delivered on the site, and, at the expense of the Contractor, to complete, or have completed, said work, and to supply or have supplied, all labor, materials, and tools of whatever character necessary to be purchased or supplied by reason of the default of

Contractor, in which event Contractor shall be further liable for any damages incurred through such default, and for any and all other breaches of this Contract.

- (h) <u>No Assignment</u>: Contractor covenants and agrees that Contractor will not assign the whole, or any part of, the within Contract without the prior written consent of and approval of the City.
- shall check all labor and materials entering into the work and shall keep such full and detailed accounts as may be necessary for proper financial management under this Contract and the system of accounts shall be such as is satisfactory to City's Engineer. City's Engineer, the Federal and/or State agency providing funding for this project, the Comptroller General of the United States, or any of their duly authorized representatives shall be accorded access to all Contractor's books, records, correspondence, instructions, drawings, receipts, vouchers, memoranda, etc. relating to this Contract, and Contractor shall preserve all such records for a period of three (3) years after the final payment hereunder.
- (j) <u>Compliance with Laws</u>: Contractor covenants and agrees that Contractor shall comply with applicable standards, orders or requirements issued under Section 306 of the Clean Air Act (42 U.S.C. 1857[h]), Section 508 of the Clean Water Act (33 U.S.C. 1368), Executive Order 11738, and Environmental Protection Agency Regulations (40 C.F.R. Part 15).
- (k) <u>Compliance with Energy Conservation Plan</u>: Contractor covenants and agrees that Contractor shall comply with mandatory standards and policies relating to energy efficiency which are contained in the State Energy Conservation Plan issued in compliance with the Energy, Policy and Conservation Act (Pub. L. 94-163).
- 8. <u>INDEMNITY</u>: Contractor shall defend, indemnify and hold harmless the City, its agents, servants, workmen, officials, officers and employees, the City's Engineer and the City's Independent Design Engineer, fully and completely from all loss, claims, suits, damages, fines, penalties, expenses and attorneys fees arising out of bodily injury, personal injury or death, or damage to or destruction of property arising out of or encountered in connection with the performance of any work provided for in this Contract, regardless of whether such is due in whole or in part or claimed to be due in whole or in part to any negligence or active negligence or passive negligence or fault of the Contractor and/or City and/or the City's agents, servants,

workmen, officials, officers and employees.

- 9. <u>CONTRACTOR'S RISK</u>: Contractor agrees that the work shall be, in every respect, at the risk of the Contractor until completed, approved, and finally accepted by City.
- 10. <u>TITLE TO THE WORK</u>: Contractor agrees that the title to all work completed and in the course of construction, and to all materials on account of which any payment has been made, shall be in the City.
- 11. <u>INSURANCE</u>: Contractor covenants and agrees that before the commencement of the work herein provided for, that Contractor is protected by the following types of insurance issued by insurance carriers having an A.M. Best rating of B+ or better:
  - (a) Workmen's Compensation Insurance with statutory limits of liability;
  - (b) Employer's Liability Insurance;
  - (c) Public Liability Insurance, including contractual liability to insure, among other obligations, Contractor's indemnity obligation set forth in Section 8 hereof with minimum limits of liability of \$1,000,000 combined single limit;
  - (d) Such other insurance, fire or other, as will indemnify and protect City and Contractor insofar as their respective interests may appear.
- Engineer/Architect, if any on this project, shall be named as additional insureds on all insurance contracts of Contractor in effect during the lifetime of this Contract, and none of such insurance contracts and/or endorsements and/or Certificates of Insurance naming the City and the Independent Design Engineer/Architect as additional insureds may be cancelled or materially altered except after thirty (30) days advance written notice by the insurer to City. Duly authenticated Certificates of Insurance evidencing the required insurance coverage shall be provided to and approved by the City Solicitor prior to the commencement of work hereunder.
- 12. <u>CONTRACT DOCUMENTS</u>: The Contractor declares and asserts that Contractor has read and understood each and every sentence and clause in each of the following and that the following are incorporated in this Agreement by reference and made a part hereof as if fully set forth hereinafter at length:
  - (a) All public advertisements by City relative to the work contemplated herein, including City's Advertisements for Bids and City's Instructions,

Information and Requirements for Bidders;

- (b) Plans and Specifications, including any Supplemental Plans and Specifications, Addenda and Instructions to Bidders;
- (c) General conditions relating to the Contract and the work;
- (d) Contractor's Bid Form of Proposal for the work contemplated herein;
- (e) City's Acceptance of Contractor's Bid Proposal;
- (f) All standard Contract provisions appearing in all Plans and Specifications;
- (g) All Provisions in this Contract;
- (h) Contractor's Performance Bond in an amount equal to one hundred percent (100%) of the total contract sum; The Bonding Company must have a rating of B+, A-, A or A+ as determined by Best's Rating Services or an equivalent agency;
- (i) Contractor's Labor and Material Payment Bond in an amount equal to one hundred percent (100%) of the total contract sum;
- (j) Contractor's Maintenance Bond as provided in Section 6(c) hereof;
- (k) All applicable provisions required by the Statutory Laws of the Commonwealth of Pennsylvania, or City's Ordinances, required to be inserted in this Contract; whether actually inserted herein or not; and
- (l) Commonwealth of Pennsylvania, Department of Labor and Industry Prevailing Minimum Wage Predetermination; each of said Documents being made a part hereof with like force and effect as though actually copied herein at length.
- 12.1 <u>COMPLIANCE WITH ALL LAWS SAFETY</u>: Contractor shall obey and conform to all federal, state, and local laws, regulations, and directives, including environmental protection statutes and regulations. Contractor shall ensure that it, its employees, agents, invitees, and lower-tier subcontractors and their employees, agents, and invitees, while at the project site, will comply with all applicable health and safety laws, rules, and regulations of all governing bodies having jurisdiction over the work or any part thereof including, without limitation, the Occupational Safety and Health Act of 1970 and the rules and regulations issued pursuant thereto.

- 12.2 <u>INJURY PREVENTION</u>: Contractor shall take all reasonable measures to prevent injury to persons or damage to any property on City's premises, or in the vicinity thereof, as a result of Contractor's performing the work, including, but not limited to: (1) all necessary steps to prevent fires; (2) the furnishing of fences, flagmen, warning signs, and barricades; (3) all necessary steps to eliminate excessive dust or smoke emission; (4) all steps necessary to protect overhead and underground utility lines, pipes, conduit, or cables; and (5) all steps necessary to protect existing work or work in progress by City or others. Should City request that Contractor take additional safeguards but Contractor fails to do so, City may provide such safeguards and Contractor shall reimburse City for the costs thereof.
- 12.3 <u>FIRST AID</u>: Contractor shall make its own arrangements to supply first aid to anyone who may be injured in connection with the work.
- 12.4 <u>SAFETY COORDINATOR</u>: Contractor shall designate one of its employees to work as Safety Coordinator. The Safety Coordinator shall be responsible for safe working conditions and compliance with all applicable safety laws, rules, regulations, and directives. Contractor shall submit, in writing to City, the name of Contractor's current Safety Coordinator.
- 13. OFFSETTING ACCOUNTS: Contractor stipulates and agrees that City may deduct, retain and offset against any and all amounts payable to Contractor under this Contract, any and all amounts owed by Contractor to City on account of any and all contracts, obligations, accounts, liens, judgments and/or any other thing or matter, whether the same is/are related or unrelated to this contract, regardless of amount.
- Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Pennsylvania. The exclusive venue for resolution of all disputes, claims and actions, whether the same involves litigation, arbitration or otherwise, shall be in Northampton County, Pennsylvania, only. Any and all civil actions and demands for arbitration by Contractor against the City pertaining to this Agreement and/or anything related thereto shall be subject to the following time limitation: civil actions must be commenced, and demands for arbitration must be filed with the American Arbitration Association, within six (6) months, it being the intent of the parties that this provision shall supercede any inconsistent statutory limitation period. This limitation of action provision shall not however apply to any civil actions and/or

demands for arbitration by City against Contractor.

- 15. <u>SEVERABILITY OF TERMS</u>: If any of the terms of this agreement are subsequently or now illegal, they may be severed from the agreement without affecting the remaining terms.
- 16. <u>NO WAIVER</u>: No action, failure of action, or delay by City shall constitute a waiver of any of City's rights or remedies under this agreement.
- 17. <u>HEADINGS</u>: The headings used in this agreement are meant only as guidelines and are in no way to be considered controlling as to the content or interpretation of this agreement.
- DISPUTE RESOLUTION: For all claims, disputes and actions, City may, at its sole option, either demand and require that the same be litigated in the Court of Common Pleas of Northampton County, or demand and require non-binding mediation under the auspices of and in accordance with the then applicable mediation rules and guidelines of the American Arbitration Association, and/or arbitration in front of a three (3) member arbitration panel under the then applicable Arbitration Rules of the American Arbitration Association. Judgment upon the award rendered by the arbitration panel may be entered in the Court of Common Pleas of Northampton County, Pennsylvania. Election by the City of mediation and/or arbitration shall operate as an automatic stay of any litigation filed by the Contractor. The costs of any mediation and/or arbitration shall be borne equally by the parties.
- 19. <u>LIMITATION ON DAMAGES</u>: In the event of any claims, disputes, actions or arbitrations, by Contractor against City, Contractor waives and relinquishes any and all claims for consequential damages, damages for delay and damages for acceleration.
- 20. <u>ENTIRE AGREEMENT</u>: This agreement sets forth the entire agreement between City and Contractor. No agreements or understandings shall be binding on either of the parties hereto unless specifically set forth in this agreement. Written amendments can be set forth subsequent to the execution of this agreement provided such are signed by duly authorized representatives of City.
- 21. <u>TRUE INTENT</u>: The contract, plans, specifications and other documents and things which form this Agreement, are intended to complement and supplement each other. Any item exhibited in one part of the contract documents shall be performed as if required in all parts

of the contract documents. In the case of conflict and/or inconsistency, the higher quality or more stringent requirement will control, and City's instructions will be followed as to the resolution of the conflict.

22. <u>BINDING EFFECT</u>: The parties hereto, intending to be legally bound hereby, covenant and agree that this Contract shall extend to, and be binding upon the parties hereto, their respective heirs, executors, administrators, successors and assigns.

IN WITNESS WHEREOF, Contractor and City have caused this Contract to be duly executed and delivered.

ATTEST:	
Secretary	BY:(President) (Individual)
ATTEST:	CITY OF BETHLEHEM
City Controller	BY: John B. Callahan. Mayor
The within contract is certified to be needed, necessary and appropriate.	
By:  City of Bethlehem Department Head Print Name:	

STATE OF )	
COUNTY OF	SS:
(Compa	ny President) being duly sworn according to law,
deposes and says that	(Company Name) has accepted the
provisions of the Workmen's Compensation Ac	t of 1915 of the Commonwealth of Pennsylvania,
with its supplements and amendments, and has	insured liability thereunder in accordance with
the terms of said Act with	(Workmen's Compensation
Insurance Carrier.)	
	(President) (Individual)
SWORN and SUBSCRIBED to before me this day of, 20	
<u></u>	
Notary Public	
(For City Use Only)	
I hereby certify that the foregoing	g Contract is founded on Appropriation Item
amounting to \$	; that the estimated
amount of expenditures under this Contract are	within the amount of said Appropriation
and are charged against said Appropriation Item	l <b>.</b>
	Business Administrator

### **SPECIFICATIONS**

FOR

### **ENGINEERING CONSTRUCTION**

**GENERAL PROVISIONS** 

City of Bethlehem, Pennsylvania Department of Public Works

#### INDEX

I.	sco	PE OF WORK	
	Α.	Ownership of Drawings	GP-1
	в.		1
		Copies of Drawings Furnished	1
		Contractor's Understanding	1
		Compliance with Special Requirements	
	F.	Changes in Work	1
	Ĝ.		2
	н.	City of Bethlehem's Right to Terminate Contract	2
	I.	Contractor's Right to Stop Work or Terminate Contract	- 7
	J.		3 3 3 3
	к.		3
	L.	· · ·	
			3 4
	М.	* ** ***	
		Cleaning Site of Project	5
	0.		5
	Ρ.	Work in Bad Weather	5
II.	CON	TROL OF WORK	
	Α.	Engineer's Status	5
	В.		5
	C.	Drawings to be Followed	5
	D.	Order of Completion	6
	E.	Surveys, Permits and Regulations	5 5 6
	F.	Inspection of Work	7
	G.		8
		Competent Workmen	8
	ī.	Utility Companies	8
III.	TAM	<u>ERIALS</u>	
	Α.	General	9
	B.	Materials	9
	C.	Storage of Materials	10
	D.	Tests of Samples of Materials	10
	E.	Handling Materials	10
IV.	LEG.	AL RELATIONS AND RESPONSIBILITY TO PUBLIC	
	Α.	Laws to be Observed	11
	в.	Workmen's Compensation Insurance	11
	c.	Contractor's Liability Insurance	īī
	D.	Indemnity	11
	E.	Fire Insurance	11
	F.	Contract Bond Requirements	12
	G.		
		Damages Liens	12
	H.		12
	I.	Assignments	13
	J.	Sanitary Conveniences	13

			PAGE
	к.	Patented Appliances, Products or Processes	GP-13
	L.		13
	М.	Prevailing Wage Specifications	14
<u>v.</u>	PROS	SECUTION AND PROGRESS	
	Α.	Prosecution of Work	14
	в.	Job Meetings	14,
	c.	Removal of Equipment	14
	D.	Use of Completed Portions	15
	E.		15
	F.		15
	G.	•	15
	н.	Temporary Suspension of Work	16
	I.	Maintenance	16
VI.		COMPENSATION	
	Α.	Modification of Drawings by Written Agreement	16
	В.	· · · · · · · · · · · · · · · · · · ·	17
	C.	Additional and Extra Work	17
	D.	Force-Account Work	17
	E.	Measurement and Payment of Quantities	19
	F.	the contract of the contract o	20
	G.	Final Estimate	20

#### I. SCOPE OF WORK

#### A. Ownership of Drawings

All drawings, specifications and copies thereof furnished by the Engineer are the property of the City of Bethlehem. They are not to be used on other work and are to be returned to the Engineer upon request at the completion of the work.

#### B. Intent of Drawings and Specifications

It is the intent to prescribe a complete project which the Contractor undertakes to construct, in full compliance with the drawings, the specifications, the Proposal with any special requirements, and the Contract. The Contractor shall furnish all materials, equipment, tools, labor, and work, and shall be responsible for the complete supervision, performance, and completion of all work in accordance with the drawings and specifications and the Agreement.

#### C. Copies of Drawings Furnished

The Engineer will furnish to the Contractor, free of charge two copies of drawings and specifications necessary for the execution of the work. The Contractor shall keep a copy of all drawings and specifications at the job site in good order, available to the Engineer or his representatives. Additional copies will be supplied if reasonable required.

#### D. Contractor's Understanding

It is understood and agreed that the Contractor has satisfied himself as to the nature and locations of the work, the conformation of the ground, the character, quality, and quantity of the materials to be encountered, the character of the equipment and facilities needed during the prosecution of the work, the general and local conditions, and all other matters which may affect the work. No verbal agreement or conversation with any agent or employee of the City of Bethlehem shall affect any of the terms or obligations herein contained.

#### E. <u>Compliance with Special Requirements</u>

Should any construction or condition be anticipated on any project which is not covered in the Contract Documents, the special requirements thereof will be stated in the Special Technical Provisions. Should any such special requirements or special notes on the drawings conflict with any of the specifications, the specifications shall govern.

#### F. Changes in Work

The City of Bethlehem may order extra work or make changes by altering, adding to, or deducting for the work, the Contractor Sum to be adjusted according to the Bid Unit Prices. All such work shall be executed under the conditions of the original Contract except that any claim for extension of time caused thereby shall be adjusted at the time of ordering such change.

In giving instructions, the Engineer shall have the authority to make minor changes in the work, not involving extra cost, and not inconsistent with the purposes of the work. In an emergency where life or property is endanger, the Engineer or Contractor shall have the authority to order any work necessary to prevent loss of life or damage to property.

No extra work shall be performed and no change shall be made except in pursuance of a written order by the Engineer; and no claim for an addition to the Contract Sum shall be valid unless it was so ordered in writing.

#### G. City of Bethlehem's Right to do Work

If the Contractor should neglect to prosecute the work properly or fail to perform any provision of his Contract, the City of Bethlehem, after three (3) days written notice to the Contractor may, without prejudice to any other remedy it may have, make good such deficiencies and may deduct the cost thereof from any payment then or thereafter due the Contractor.

#### H. The City of Bethlehem's Right to Terminate Contract

If the Contractor should be adjudged a bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed on account of insolvency, or if he should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to supply enough properly skilled workmen or proper materials, or if he should fail to make prompt payment to Sub Contractor, or for materials or labor, or persistently disregard laws, ordinances, or the instructions of the Engineer, or otherwise be guilty of a substantial violation of any provision of the Contract, then the City of Bethlehem, upon the certificate of the Engineer that sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the Contractor seven (7) days notice, terminate the employment of the Contractor and take possession of the premises and of all materials, tools and appliances thereon and finish the work by whatever method it may deem expedient. In such case the Contractor shall not be entitles to receive any further payment until the work is finished. If the unpaid balance of the Contract price shall exceed the expense of finishing the work, including compensation for additional managerial and administrative service, such excess shall be paid to the Contractor; however, if such expenses shall exceed such unpaid balance, the Contractor shall pay the difference to the City of Bethlehem. The expense incurred by the City and the damage incurred through the Contractor's default shall be certified by the Engineer.

#### I. Contractor's Right to Stop Work or Terminate Contract

If the work should be stopped under any order of any court or other public authority having jurisdiction, for a period of three (3) months, through no fault or act of the Contractor or of anyone employed by him; or if the Engineer fails to issue any estimate for payment within fifteen (15) days after it is due, then the Contractor may, upon ten (10) days written notice to the City of Bethlehem and Engineer, stop work or terminate his Contract and recover from the City of Bethlehem payment for all work executed and reasonable anticipated profit thereon, and for any loss or damage sustained upon any plant or materials.

#### J. Rights of Various Interests

Whenever work being done by the City of Bethlehem's forces or by other contractors is contiguous to work covered by the specific Contract hereunder, the respective interest involved shall be established by the Engineer to secure the completion of the various portions of the work in general harmony.

#### K. Separate Contracts

The City of Bethlehem reserves the right to let other contracts in connection with the specific work hereunder. The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work and shall properly connect and coordinate his work with theirs.

If any of the Contractor's work depends for proper execution or results upon the work of any other contractor, the Contractor shall inspect and promptly report to the Engineer any defects in such other Contractor's work that render it unsuitable for such proper execution and results. His failure so to inspect and report shall constitute an acceptance of the other contractor's work as fit and proper for the reception of his own work, except as to defects which may develop in the others contractor's work after the execution of the Contractor's specific work hereunder.

To insure the proper execution of his subsequent work, the Contractor shall measure work already in place and shall at once report to the Engineer any discrepancy between the executed work and the drawings.

#### L. <u>Sub-Contracts</u>

The Contractor shall, if so requested after the execution of the Contract, notify the Engineer in writing of the names of Sub-Contractors proposed for the work and shall not employ any that the Engineer may object to as incompetent or unfit.

The Contractor agrees that he is as fully responsible to the City of Bethlehem for the acts or omissions of his Sub-Contractors, and of persons directly or indirectly employed by them, as

he is for the acts and omissions of persons directly employed by him.

Nothing contained in the Contract Documents shall be interpreted as creating any contractual relations between any Sub-Contractors, and the City of Bethlehem.

#### M. PROTECTION OF WORK AND PROPERTY

The Contractor shall continuously maintain adequate protection of all his work from damage and shall protect the City of Bethlehem's property from injury or loss arising in connection with his Contract. He shall make good any such damage, injury or loss, except such as may be directly due to errors in the Contract Documents or caused by agents or employees of the City of Bethlehem. He shall adequately protect adjacent property as provided by law and the Contract Documents. He shall provide and maintain all passageways, guard fences, lights and other facilities for protection required by public authority or local conditions.

The Contractor shall place the proper barricades, lights and blinkers along the construction site and the proper construction and detour signs at all approaches to the Construction site, all in accordance with PennDOT handbook for work area traffic control and the Federal Manual on Uniform Traffic Control Devices.

- 1. OSHA
- 2. PennDOT

The Contractor shall maintain a responsible employee, within thirty (30) minutes travel time of the City and available by telephone, who shall be responsible for maintaining the job in such a manner, that the public is in no way endangered or subjected to undue hardship. In particular, trenches shall be maintained to the satisfaction of the Engineer. The telephone number of this employee shall be posted with the Bureau of Police as well as the Director of Public Works and City Engineer.

Under emergency conditions, as determined by the Engineer, the Contractor shall have sufficient men, materials and equipment available to commence work within three hours of notification to make such repairs, or do other work to correct emergency conditions. Failure to do so shall give the City a right to perform the required corrective work at the Contractor's expense, said expense calculated according to the actual cost of labor, materials, and equipment plus 100%.

In an emergency involving the possibility of loss of life or bodily injury, or of damage to the work or to the adjoining property, the Contractor, without special instructions or authorization from the Engineer, is hereby permitted to act, at his discretion, to prevent such threatened loss or injury, or damage; moreover, he shall be required so to act, without appeal, if so instructed and authorized. Any compensation claimed by the

Contractor on account of emergency work shall be determined by agreement or arbitration.

#### N. <u>Cleaning Site of Project</u>

The Contractor shall, when and as directed by the Engineer, remove from all public and private property, at his own expense all temporary structures, rubbish and waste materials resulting from his operation.

#### O. Weekend, Night and Holiday Work

No work shall be done between the hours of 5:00 P.M. and 8:00 A.M., nor on Saturday or Sunday, and also not on legal holidays that are recognized by the City, except such is necessary for the proper care and protection of work already performed or except in case of an emergency. If the Contractor wishes to work during these restricted times, he must obtain permission from the Engineer.

#### P. Work in Bad Weather

During freezing, stormy, inclement weather, no work shall be done except such as can be done satisfactorily in the opinion of the Engineer to secure first-class construction throughout the entire project.

#### II. CONTROL OF WORK

#### A. Engineer's Status

The Engineer shall have general supervision and direction of the work. He has authority to stop work whenever such stoppage may be necessary to insure the proper execution of the Contract. He shall also have the authority to reject all work and materials which do not conform to the Contract, to direct the application of forces to any portion of the work where it, in his judgement, is required, to order the force increased or diminished, and to decide the questions which may arise in the execution of the work.

#### B. Engineer's Decisions

The Engineer, shall, within a reasonable time, after their presentation to him, make all necessary decisions in writing on all claims of the City of Bethlehem or of the Contractor, and on all other matters relating to the execution and progress of the work or the integration of the Contract Documents. All such decisions of the Engineer shall be final.

#### C. Drawings to be Followed

The approved drawings, cross-sections, and such supplemental detailed and standard drawings as may be required for successful completion of the project, will show the location, details and

dimensions of the work contemplated. The Contractor shall perform the work in accordance with the intent of the drawings and specifications and shall take no advantage of any errors or omissions in the drawings or discrepancy between the drawings and specifications. The Engineer will make such corrections and interpretations as may be deemed necessary for the fulfillment of the specifications and drawings. Where dimensions on drawings are given or can be computed, scaled measurements shall not be used. Any deviation from the drawings which may be required by the exigencies of the construction will, in all cases, be determined by the Engineer and authorized in writing.

If the Contractor observes that the drawings and specifications are at variance therewith, he shall promptly notify the Engineer in writing, and any necessary changes shall be adjusted as provided for in the Contract as changes in the work.

#### D. Order of Completion

The Contractor shall subject, at such times as may be requested by the Engineer, schedules which show the order in which the Contractor proposes to carry on the work, with dates at which the Contractor shall start the several parts of the work and estimated dates of completion of the several parts.

#### E. Surveys, Permits and Regulations

The Engineer shall furnish all surveys unless otherwise specified. Permits and licenses of a temporary nature necessary for the prosecution of the work shall be secured and paid for by the Contractor.

The Engineer shall stake out all work for the project and shall set necessary grade stakes and bench marks. The Contractor shall maintain at least three (3) batter boards at all times when laying pipe lines at specific grade. Grade lines shall be parallel to the trench extending along at least four (4) grade stakes.

All marks given shall be carefully preserved and if destroyed or removed without authority, they will be reset, if necessary, at the expense of the Contractor.

Any work improperly done without lines or levels or instructions shall be removed and replaced by the Contractor at his own expense.

It shall be the duty of the Contractor to keep the Engineer informed of the times and places at which he intends to work in order that he may have an ample opportunity to furnish the necessary lines and grades and/or to check the lines and elevations with a minimum of inconvenience to the Engineer or of delay to the Contractor.

In the event the Contractor fails to comply with the specifications and the Engineer's instructions regarding any other phase of the work the Engineer may delay giving line and grade until such time as the Contractor complies with his instructions.

The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the work as drawn and specified. If the Contractor performs any work knowing it to be contrary to such laws, ordinances, rules and regulations, and without notice to the Engineer, he shall bear all costs arising therefrom.

#### F. Inspection of the Work

The Engineer and his representative shall at all times have access to the work wherever it is in preparation or in progress, and the Contractor shall provide proper facilities for such access and for inspection.

If the specifications, the Engineer's instructions, laws, ordinances or any public authority require any work to be specially tested and approved, the Contractor shall give the Engineer timely notice of its readiness for inspection, and, if the inspection is by an authority other than the Engineer, of the date fixed for such inspection. Inspections by the Engineer shall be promptly made and, where practicable, at the source of supply. If any work should be covered up without approval or consent, it must, if required by the Engineer, be uncovered for examination at the Contractor's expense.

Re-examination of questioned work may be ordered by the Engineer and, if so ordered, the work must be uncovered by the Contractor. If such work be found in accordance with the Contract Documents, the City of Bethlehem shall say the cost of re-examination and replacement, if such work be found not in accordance with the Contract Documents, the Contractor shall pay such costs, unless he shall show that the defect in the work was caused by another Contractor, and in that event, the City of Bethlehem shall pay such cost.

The above provisions for Re-Examination shall not apply, if the Contractor has backfilled work not observed by the City representative. The Contractor at his sole cost and expense shall re-excavate the backfilled material to the structure and backfilled according to the specification in the presence of the City's representative.

The inspection of the work shall not release the Contractor from any of his obligations to fulfill his Contract as herein specified, and defective work shall be made good and unsuitable materials may be rejected, notwithstanding the fact that such work and materials may have previously been accepted for payment.

#### G. Supervision

The Contractor shall keep on his work during its progress a competent superintendent and any necessary assistant, all satisfactory to the Engineer. The superintendent shall not be changed except with the consent of the Engineer, unless the superintendent proves to be unsatisfactory to the Contractor and ceases to be in his employ.

The superintendent shall represent the Contractor in his absence and all directions given to him shall be as binding as if given directly to the Contractor. Important directions shall be confirmed in writing to the Contractor. Other directions shall be so confirmed on written request in each case. The Contractor shall give efficient supervision to the work, using his best skill and attention.

If the Contractor, in the course of the work, finds any discrepancy between the drawings and the physical condition of the locality, or any errors or omissions in drawings or in the layout as given by points and instructions, it shall be his duty immediately to inform the Engineer, in writing, and the Engineer shall promptly verify the some. Any work done after such discovery, until authorized, will be done at the Contractor's risk.

#### H. Competent Workmen

The Contractor shall employ only competent and efficient superintendents, foreman, clerks, timekeepers, equipment operators, laborers and mechanics or artisans for every kind of work and whenever, in the opinion of the Engineer, any man if unfit to perform his task, or does his work contrary to instructions, or conducts himself improperly, the Contractor must discharge him immediately upon the Engineer's written request and not employ him again on the project without permission.

#### I. UTILITY COMPANIES

#### 1. Cooperation with Utility Companies

During the time the Contractor is working, it may be necessary for U.G.I., Bell Telephone, P.P.& L. or the Bureau of Water to construct, renew or repair their mains or service lines. The Contractor shall cooperate with the workmen performing work on these utilities and shall arrange his work so as not to interfere with the progress of these utility companies.

#### 2. Sub-Surface Utilities

Location of all sub-surface utilities and appurtenances or any other structure where indicated on plans have been complied from various sources of information made available to the City. This data is intended primarily for the benefit of the Contractor, and the City will not be respon-

sible for the accuracy thereof or for any errors or omissions.

In accordance with HB 2543, Act No. 287 the Contractor shall notify all "Users" (Utilities) that he will be making an excavation at least three (3) working days prior to the day of beginning such work so that each "User" can mark their lines for the Contractor.

The Contractor shall indicate that he has notified all "Users" by supplying to the City's representative on the project site a list of all Serial or Code Numbers received from the appropriate "User" (Utility Company).

The following companies shall be notified:

- (a) U.G.I. Company
- (b) P.P.& L. Company
- (c) Bell Telephone Company
- (d) City of Bethlehem
  - 1. Electrical Bureau
  - 2. Bureau of Water
  - 3. Bureau of Sewers

#### III. MATERIALS

#### A. General

Unless otherwise stipulated, the Contractor shall provide and pay for all materials, labor, water, tools, equipment, light, power, transportation and other facilities necessary for the execution and completion of the work.

The Contractor shall furnish the Engineer, promptly after the award or execution of the Contract, with a complete statement of the origin, composition and manufacturer of all materials to be used in the construction of the project as so requested. All materials used shall comply with the requirements of the specifications.

#### B. Materials

#### 1. Preliminary Approval

The source of supply of each of the materials shall be approved by the Engineer before delivery is started. Representative samples of the materials shall be submitted, when indicated or directed, for examination or test, and written approval of the quality of such samples shall be received by the Contractor prior to obtaining materials from the respective sources of supply.

#### 2. Inspection

All materials shall be approved before being stored on the project or incorporated in the work and may be inspected and tested at any time during the progress of their preparation and use. Questionable materials pending laboratory acceptance, shall not be unloaded and incorporated with materials previously accepted as meeting specifications. The Contractor shall furnish the necessary assistance to the Engineer in obtaining representative samples as required. Only materials conforming to the requirements of the specifications shall be used in the work.

#### C. Storage of Materials

Materials shall be stored so as to insure preservation of their specified quality and fitness for the work. When so directed, they shall be placed on wooden platforms or other hard and clean surfaces and not on the ground. When required, they shall be placed under cover.

Stored materials shall be located so as to facilities prompt inspection and control. Private property shall not be used for storage purposes without written permission of the owner or lessee.

#### D. Tests of Samples of Materials

All tests of samples of materials shall be made by the Engineer or by an accepted testing laboratory in accordance with methods described in "Standard and Tentative Methods of Tests" of the American Society For Testing Materials.

Samples must meet all tests as required under the specifications to the satisfaction of the Engineer. The Contractor shall permit any designated representative of the Engineer to inspect any and all materials being used or proposed to be used, at any time before, during or after its preparation, or while being used during the progress of the work or after the work has been completed. All such materials not complying with these specifications, whether in place or not, shall be rejected and shall be removed promptly form the work. The Contractor shall furnish or arrange with producers and manufacturers to produce all necessary, materials, labor, tools, and equipment for such inspection.

#### E. Handling Materials

All materials shall be handled carefully and in such manner as to preserve their quality and fitness for the work. They shall be trans ported from the storage site to the work in tight vehicles so constructed as to prevent loss or segregation of materials after loading and measuring in order that there may be so inconsistencies in the quality of materials intended for incorporation in the work as loaded and the quality as actually

received at the place of operations. Materials shall be measured at the storage site prior to hauling to the project, unless otherwise specified by the Engineer.

#### IV. LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

#### A. Laws to be Observed

The Contractor at all times shall observe and comply with all Federal, State and Municipal Laws, Ordinances, and Regulations in any manner affecting the conduct of the work or applying to employees on the project, as well as all orders or decrees which have been promulgated or enacted, by any legal bodies or tribunals having authority or jurisdiction over the work, materials, employees or Contract.

Special attention is drawn to the regulation of the Pennsylvania Department of Labor and Industry covering equipment, materials, labor, safety, sanitation and other regulations on which the Contractor shall be fully informed and with which he shall fully comply.

#### B. Workmen's Compensation Insurance

The Contractor will be required to carry Workmen's Compensation Insurance or file a Certificate of Exemption as provided for by the Workmen's Compensation Act, and must execute an affidavit in re-accepting provisions of the Workmen's Compensation Act on the form supplied with the Contract.

#### C. Contractor's Liability Insurance

The Contractor shall maintain such insurance as will protect him from any claims for damages for personal injury, including death, which may arise from operations under his Contract, whether such operations are conducted by himself or by any Sub-Contractor or anyone directly or indirectly employed by either of them. Certificates of such insurance, shall be filed with the Engineer, if he so requires, and shall be subject to his approval for adequacy of protection.

#### D. Indemnity

The Contractor shall indemnify and save harmless the City of Bethlehem from and against all losses and all claims, demands, payments, suits, recoveries and judgements of every nature and description brought or recovered against him, by reason of any act or omission of said Contractor, his agents or employees, in the execution of the work or in the guarding of it.

#### E. Fire Insurance

The Contractor shall secure, in the name of the City of Bethlehem, policies of fire insurance in amount, form and companies satisfactory to the Engineer, upon such structures and materials as shall be specified by the Engineer, payable to the City of Bethlehem for the benefit of the Contractor, or to the City of Bethlehem as the insured party, as the Engineer shall find their interests to appear.

#### F. Contract Bond Requirements

The successful bidder shall furnish at his own expense, dated as of same date as the Contract, the following:

#### 1. Performance Bond

A bond in a sum equal to the full amount of the Contract, running to the City of Bethlehem, Pennsylvania to insure the construction of the completion of the entire work according to the Contract Documents within the time specified.

#### 2. Labor and Material Bond

A bond in sum equal to the full amount of the Contract, running to the City of Bethlehem for the protection of Sub-Contractors, labor and materialmen, according to the statutes of the Commonwealth of Pennsylvania, in effect at the time of the date of the bond.

#### 3. Maintenance Bond

A Maintenance Bond in a sum equal to ten percent (10%) of the full amount of the Contract, not to be less than One Thousand Dollars (\$1,000) minimum, guaranteeing the City of Bethlehem, Pennsylvania, against faulty workmanship and materials incorporated in the work by the Contractor for a period of one (1) year from the date of the completion, approval and acceptance of the work by the City.

#### G. <u>Damages</u>

Any claim for damages arising under any Contract covered hereby shall be made in writing to the party liable within a reasonable time of the first observation of such damages and not later than the time of final payment, except as expressly stipulated otherwise in the case of faulty work or materials, and shall be adjusted by agreement or arbitration.

#### H. <u>Liens</u>

Neither the final payment nor any part of the retained percentage shall become due until the Contractor, if required, shall deliver to the City of Bethlehem a complete release of all liens arising out of his Contract, or receipts in full in lieu thereof, and if required, in either case, an affidavit that so far as he has knowledge or information the releases and receipts include all the labor and material for which a lien could be filed; but the Contractor may, if any Sub-Contractor refuses to

furnish a release or receipt in full, furnish a bond satisfactory to the Engineer, to indemnify the City of Bethlehem against any lien. If any lien remains unsatisfied after all payments are made, the Contractor shall refund to the City of Bethlehem all moneys that latter may be compelled to pay in discharging such a lien, including all costs and a reasonable fee for counsel.

#### I. Assignment

Neither party to the Contract shall assign the Contract or sublet it as whole without the written consent of the other, nor shall the Contractor assign any moneys due or to become due to him thereunder without the previous written consent of the Engineer.

#### J. Sanitary Conveniences

Sanitary conveniences complying with the regulations of the State Health Department and the City of Bethlehem Bureau of Health shall be provided for use of the workmen, and their exclusive use, strictly enforced.

#### K. Patented Appliances, Products or Processes

The Contractor agrees to indemnify and save harmless the City of Bethlehem from all suits or actions of every nature and description brought against him for or on account of the use of patented appliances, products or processes, or the infringement of any patent, trademark, or copyright.

#### L. Minimum Wage Specifications

In accordance with the provisions of the Act of June 21, 1937 P.L. 1865, its supplements or amendments (Pennsylvania Laws), the minimum wage requirements as may be set forth in the Proposal and the Specifications and Contract, shall be strictly observed and fulfilled.

The Contractor is responsible in every way for all wages, paid or due to any employees engaged upon the project under Contract, as contemplated by said Act, the Specifications and the Contract, and shall not undertake to pass such responsibility elsewhere, and employees shall not be required to refund, directly or indirectly any part of such wage or wages.

In accordance with the provisions of said Act, the Contractor shall certify that he is not receiving or requiring or will not receive or require, directly or indirectly, from any employee any refund of any such minimum wage or wages. This certificate shall be submitted to the Engineer within ten (10) days after the close of the pay period. Payment of estimate will be withheld if such certificate is not submitted in its proper form within the time limit and as herein specified.

#### M. Prevailing Wage Specifications

In accordance with the provisions of the Act of August 15, 1961, P.L. 442, its supplements or amendments (Pennsylvania Laws) the specifications for every project having a total cost in excess of Twenty-Five Thousand (\$25,000) for any public work to which any public body is a party, shall contain a provision stating the minimum wage rate which can be paid (as shall be designated by the Secretary of Labor and Industry of the Commonwealth of Pennsylvania or his duly authorized deputy or representative) to the workmen employed in the performance of the Contract, and the contract shall contain a stipulation that such workmen shall be paid not less than such minimum wage rate.

#### V. PROSECUTION AND PROGRESS

#### A. Prosecution of Work

Before the "Notice to Proceed" is given for the project, the Contractor or his authorized representative shall go over the project accompanied by the Engineer, or his designed representative and shall observe for himself, with the approved drawings before him, all pertinent conditions relative to the Contract including the status of rights-of-way, structures, and obstructions to be removed, altered, or changed.

The Work shall be prosecuted at the time and in or on the part or parts of the project and with such forces of workmen, materials and equipment as may be ordered by the Engineer in writing, to complete the project as contemplated in the drawings, specifications, and Contract. The Contractor shall perform the work and take all precautions as he may deem necessary to complete the project within the Contract working time and prior to the final inspection for the acceptance.

#### B. <u>Job Meetings</u>

The Contractor shall arrange for regularly scheduled meetings, if so requested by the Engineer, for the purpose of discussing the work in general and special problems that may arise.

The meeting shall be held during regular working hours at a time and place mutually agreeable to the Contractor and City.

The Engineer shall preside and distribute copies of the minutes of each meeting prior to the next scheduled meeting.

#### C. Removal of Equipment

In case of annulment of his Contract before completion for any cause whatever, the Contractor, if notified to do so by the City of Bethlehem, shall promptly remove any part of all of his equipment and supplies from the property of the City of Bethlehem, failing which the City of Bethlehem shall have the right to remove such equipment and supplies at the expense of the Contractor.

#### D. <u>Use of Completed Portions</u>

The City of Bethlehem shall have the right to take possession of and use any completed or partially completed portions of the work before the Contract expiration date. This action shall not be deemed an acceptance of any work not completed in accordance with the Contract Documents. If such prior use increases the cost of or delays the work, the Contractor shall be entitled to such extra compensation, or extension of time, or both, as the Engineer may determine.

#### E. Delays and Extensions of Time

If the Contractor be delayed at any time in the progress of the work by any act or neglect of the City of Bethlehem or its employees, or by any other contractor employed by the City of Bethlehem, or by changes ordered in the work, or by strikes, lockouts, fire, unusual delay in transportation, unavoidable casualties or any causes beyond the Contractor's control, or by delay authorized by the Engineer pending arbitration, or by any cause which the Engineer shall decide to justify the delay, then the time of completion shall be extended for such reasonable time as the Engineer may determine, but in no event shall the Contractor be entitled to any additional compensation, or to the recovery of damages, as a result of any delay, however cause, to the completion of this Contract.

#### F. Correction of Work Before Final Payment

The Contractor shall promptly remove from the premises all materials condemned by the Engineer as failing to conform to the Contract, whether incorporated in the work or not, and the Contractor shall promptly replace and re-execute his own work in accordance with the Contract and without expense to the City of Bethlehem, and shall bear the expense of making good all work of other contractors destroyed or damaged by such removal or replacement.

If the Contractor does not correct such condemned work and materials within a reasonable time, fixed by written notice, the City of Bethlehem may perform said work at the expense of the Contractor. If the Contractor does not pay the expense of such corrective work within ten (10) days time thereafter, the City of Bethlehem may, upon ten (10) days written notice deduct the cost and expense from moneys due to the Contractor.

#### G. Payment Withheld

The City of Bethlehem may withhold, or, on account of subsequently discovered evidence, nullify the whole or a part of any certificate to such extent as may be necessary to protect itself from loss on account of:

- 1. Defective work not remedied.
- Claims filed on reasonable evidence indicating probable filing of claims.
- 3. Failure of the Contractor to make payments promptly to sub-contractors or for materials or labor.
- 4. A reasonable doubt that the Contract can be completed for the balance then unpaid.
- 5. Damage to another contractor.

#### H. Temporary Suspension of Work

The Engineer only shall have the authority to suspend the work wholly or in part, due to unsuitable weather, or such other conditions as are considered unfavorable for the suitable Prosecution of the work, or due to the failure on the part of the Contractor to carry out orders given or to perform any provisions of the Contract, or due to unforeseen conditions which had not been provided for in estimating the Contract time required for completion of the work.

#### I. <u>Maintenance</u>

The Contractor shall make all needed repairs on his work as it progresses and during a period of one (1) year after the final acceptance of the work, and he agrees that, during the same period of one (1) year, the City of Bethlehem shall retain out of the moneys payable to him under the Agreement, the sum of ten percent (10%) of the amount of the Contract, and that the City of Bethlehem may expend the same, or so much thereof as may be required, in making the aforesaid repairs to the satisfaction of the Engineer, if, within five (5) days after the delivery or mailing of notice in writing to the Contractor or his agents, he or they shall neglect to make the aforesaid repairs; provided however, that in case of an emergency where, in the opinion of the Engineer, delay would cause serious loss or damage, the City of Bethlehem, without previous notice, may make repairs and do so at the expense of the Contractor.

The Contractor, by filing a guarantee bond with satisfactory sureties for a period of one (1) year, will be paid the ten percent (10%) retained upon final acceptance of the work.

#### VI. COMPENSATION

#### A. Modification of Drawings by Written Agreement

The drawings herein referred to may be modified and changed from time to time, as may be agreed to in writing between the Engineer and Contractor, in a manner not materially affecting the substance thereof, if such changes are necessary to carry out and complete more fully and perfectly the work agreed to be done and performed. Additional work involved in such changes shall be paid for at the Contract unit price. If such changes and modifications materially increase the unit cost of the work, the increased expense will be paid by the City of Bethlehem, except as provided in Section VI, Article "C" below. If such modifications and changes diminish the unit cost of the work, the amount of said diminution may be retained or withheld by the City of Bethlehem. No consequent loss or anticipated profit on work not executed will be paid to the Contractor.

#### B. Deductions for Uncorrected Work

If the Engineer deems it inexpedient to correct work injured or not done in accordance with the Contract, an equitable deduction from the Contract price shall be made therefore.

#### C. Additional and Extra Work

The term "Extra Work" as used herein, refers to and includes work required by or on behalf of the City of Bethlehem, which, in the judgement of the Engineer, involves changes in or additions to the required by the plans, specifications and addenda, on the date of the Contract, which is not required for the construction of the complete project in compliance with such plans and specifications.

Any work for which there is no quantity and bid price included in the Contract will be done as "Extra Work" at a price to be agreed upon previously in writing by the Contractor and the Engineer and approved by the City of Bethlehem. Where a unit price or lump sum cannot be agreed upon by both parties or where the method of payment is impractical, the Engineer may order this work done a "Force-Account" basis. Any such work performed by the Contractor without written authority or approval of the Engineer shall be at the Contractor's risk and responsibility.

If the Contractor performs additional or extra work in accordance with an approved work order, he shall be entitled to compensation for the work performed only as stipulated in the said work order.

#### D. Force-Account Work

All extra work on a "Force-Account" basis will be paid for in the following manner:

#### 1. Labor

For all labor, including drivers and operators, and foremen in direct charge of the specific operations, the Contractor shall receive the current local rate of wage per hour, to be agreed upon in writing before starting such work, for each and every hour that said labor and foremen are actually engaged in such work, including such over-time as provided by existing laws

and regulations, plus fifteen (15%) percent in addition thereto.

The Contractor will also be allowed to add to such Direct labor and foremen costs the percentage rates paid for the following items:

- (a) Social Security Tax at the percentage legally required.
- (b) Unemployment Tax at the percentage legally required.
- (c) Workmen's Compensation Insurance at the policy percentage rate.
- (d) Contractor's Public Liability Insurance at the policy percentage rate.
- (e) Contractor's Property Damage Liability Insurance at the policy Percentage rate, including coverage for damage due to blasting and explosion when such additional coverage is secured on projects where blasting is required.

NOTE: The Fifteen (15%) percent herein before noted shall not be added to the tax and insurance items listed above.

#### 2. Materials

For all materials used, the Contractor shall receive the actual cost of such materials, including freight charges, as shown by receipted bills, to which cost shall be added a sum equal to ten percent (10%).

#### 3. Equipment

For any machinery, trucks or equipment (exclusive of drivers and operators), except small tools and equipment for which no rental is allowed, which it may be deemed necessary to use, the Engineer shall allow the Contractor a reasonable rate of hire for machinery, trucks, or equipment, which shall include fuel and lubricants, to be agreed upon in writing before such work is begun, for each and every hour that such machinery, trucks, or equipment are in use on such work, and to which sum no percentage shall be added.

#### 4. Insurance

The Contractor will be allowed to add to the total actual direct costs of such extra work, without duplicating or overlapping of charges allowed under paragraph one (1) above, the following percentages of insurance rates paid,

when the Contractor is required to carry such insurance by the special requirements of the Proposal and Contract:

- (a) Railroad's Protective Public Liability Insurance at the policy percentage rate.
- (b) Railroad's Protective Property Damage Liability Insurance at the policy percentage rate.

No allowance will be made for Contractor's Protective Public Liability and Property Damage Liability Insurance in the case of sub-contracting, notwithstanding provision for such protection in the "Special Requirements."

The fifteen percent (15%) added to the labor and foremen costs and the ten percent(10%) added to the materials costs shall not be added to these insurance items.

The compensation as herein provided shall be received by the Contractor as payment in full for extra work done on a "Force-Account" basis, the fifteen percent (15%) which is allowed on the working force and the ten percent (10%) on material being made and accepted to cover all general superintendence, use of small tools and equipment for which no rental is allowed, job and general overhead, bonding expenses, and anticipated profit.

All claims for extra work done on a "Force-Account" basis shall be submitted to the Engineer by the Contractor upon certified triplicate statements, to which shall be attached original receipted bills covering the cost of and the freight charges on all materials used in such work, and said statements shall be filed immediately upon completion of such extra work. Should the Contractor refuse to prosecute the work as directed or to submit his claim as required, then the City of Bethlehem may withhold payment of all moneys until the Contractor's refusal or failure is eliminated.

No payment shall be made for any extra work done on a "Force-Account" basis unless complete records of all labor, materials, equipment, and all costs of any nature whatsoever are submitted to the Engineer or his representative on a daily basis and signed and certified by both the Contractor's representative and the Engineer at the completion of each day's work.

#### E. Measurement and Payment of Quantities

All work completed under the Contract shall be measured and quantities computed by the Engineer according to the standard of weights and measures recognized by the National Bureau of Standards.

Payment will be made on the basis of the unit prices bid or as previously stated in Paragraph VI, Articles "C" and "D".

#### F. Current Estimates

Until fifty percent (50%) of the contract is completed, on or about the fifteenth day of each month, ninety percent (90%) of the value, and after fifty percent (50%) of the contract is completed, ninety-five percent (95%) of the value, said value being based on the contract prices of labor and materials incorporated in the work contemplated under this contract up to the first day of that month, as estimated by City's Engineer, shall be paid to Contractor, but no payment whatever, or any time, shall be demanded or due, except under the written Certificates of City's Engineer to the effect that such payments have become due, and such Certificates shall, in every instance, be a condition precedent to the right to require payments, and the City Engineer's decision thereon shall be final.

Provided , however, that in the event a dispute arises between City and Contractor, which dispute is based upon increased costs claimed by Contractor to be occasioned by delays or other actions of another contractor, any possible liability may be withheld until such time as a final resolution is agreed to by all parties directly or indirectly involved, unless the contractor causing additional claim furnishes a bond satisfactory to City to indemnify City against the claim. All such monies retained by City may be withheld from Contractor until substantial completion of the contract.

Any payment or payments due Contractor by City shall not bind City to the acceptance of the work performed. Payments may be withheld if the work is not proceeding in accordance with the terms of the Contract.

#### G. Final Estimate

The Engineer shall, within 30 days of notice of substantial completion of the work, inspect the same and make a final estimate of the work done under the contract and the City of Bethlehem shall, within 45 days after such notice, pay the entire sum so found to be due thereunder, after deducting therefrom all previous payments, all percentages to be kept and retained under the provisions of the contract, and an additional retainage in the sum of 1 1/2 times the amount of work remaining to be completed. All prior estimates and payments shall be subject to correction in any subsequent estimate and in the final estimate and payment.

# PROJECT NO. ST-13-C04

#### 1. Standard Specifications

All work shall be done in strict accordance with the various Standard City Specifications, included in these Specifications and as prescribed in these Detailed Specifications and Pub 408/2000 of the Commonwealth of Pennsylvania, Department of Transportation, Specifications, latest revision thereof shall apply.

#### 2. Time of Completion

The Contractor shall begin work within ten (10) calendar days from the date of the notification by the City to proceed with the construction, and shall complete all work required under the Contract within thirty (30) calendar days thereafter.

#### 3. Permits and Inspection

The City has applied for and received from the Commonwealth of Pennsylvania Highway Occupancy Permits. Penn DOT may require an inspector when work is being done and the Contractor will be required to pay for this service. The Contractor shall obtain all necessary permits for the prosecution of the work under this Contract, shall furnish all bonds, shall pay for all inspection other than that by Department of Public Works and for all charges in connection with such permits and bonds.

#### 4. Materials

All materials listed in these Specifications shall, unless otherwise noted, conform to the requirements of the Standard Specification, i.e., "Form 408, Commonwealth of Pennsylvania, Department of Transportation." Section numbers refer to Standard Specifications.

#### 5. Cooperation with Utility Companies

During the time the Contractor is working it may be necessary for various Utility Companies or the City to renew or repair their mains or service lines. The Contractor shall cooperate with the workmen performing work on these utilities and shall arrange his work so as not to interfere with the progress of the workmen.

#### 6. Sub-Surface Utilities

Location of all sub-surface utilities and appurtenances or any other structure where indicated on plans have been compiled from various sources of information made available to the City. This data is intended primarily for the benefit of the Contractor and the City will not be responsible for the accuracy thereof or for any errors or omissions.

In accordance with Act 38 Pennsylvania One Call System the Contractor shall notify all utilities that he will be making an excavation at least three (3) working days prior to the day of beginning such work so that each Utility Company can mark or locate their lines for the Contractor.

The Contractor shall indicate that he has notified all utility companies by supplying to the City's representative on the project site the Serial Number received from the Act 38 call.

#### 7. Maintenance and Protection of Traffic

#### General Notes

(a) The maintenance of traffic and the protection of the traveling public approaching the construction area and within the limits of construction is the responsibility of the Contractor.

The Contractor shall maintain traffic control signs and devices and maintain traffic at all times according to the plans and the Highway Occupancy Permit (HOP).

#### 8. Construction

The Contractor shall plan his work with a minimum amount of inconvenience to abutting property owners and the traveling public. The Contractor shall confine his operations to within the street right-of-way.

#### 9. Contractor's Responsibility and Supervision

The Contractor shall be responsible for all work performed on this project and to supervise and carry out faithfully and efficiently the intent of the plans and specifications.

The Contractor shall employ a competent superintendent or representative who shall be on the project site at all times when the work is being performed to receive orders and directions from the Engineer or his representative and who shall be vested with full authority by the Contractor to execute such orders without delay and who shall also be responsible for the construction practices and workmanship of all persons employed on this project for the Contractor or for a Sub-Contractor employed to perform a specialized item under this project.

The Contractor shall at all times keep on the project site a copy of the plans, specifications and grade or cut sheets for his use or for the benefit of any sub-contractor.

It is the intent of this section that the Contractor exercise more responsible control over the Construction Practices and Workmanship by his employees or the employees of a Sub-Contractor rather than the City's Engineer or his representative performing this function for the Contractor.

#### 10. Temporary Pavement

The Contractor shall place temporary paving of (B.C.B.C.) or cold patch a minimum of 2" inches on all excavated areas. These areas shall be kept and maintained until such time that the permanent paving can be placed. This paving shall be removed prior to the permanent paving. This is not a pay item and shall be considered incidental to the various items.

#### 11. Extra Work

The Contractor is hereby notified that no requests or claims for extra compensation for extra work will be considered unless the City Engineer authorizes such work, in advance, in writing.

#### 12. Weekend and Holiday Work

The Contractor's attention is directed to the fact that he may not work on those days which are recognized by the City as Legal Holidays or on Saturdays or on Sundays except in an emergency or with prior approval of the City Engineer.

#### 13. Permits and Inspection

The Contractor shall obtain all necessary permits for the prosecution of the work under this Contract, shall furnish all bonds, shall pay for all inspection other than that by Department of Public Works and for all charges in connection with such permits and bonds.

#### 14. Backfill Material

All backfill material used on this project shall be 2A Modified Material. This is not a pay item and shall be considered incidental to the various items.

#### 15. Dust Control

The Contractor shall be responsible for all dust control on this project. The methods used shall be approved by the Engineer. This is not a pay item and shall be considered incidental to the various items.

#### DETAILED SPECIFICATIONS PROJECT NO. ST-13-C04

The Contractor shall perform all work as detailed below and in strict accordance with the various Standard City Specifications, included as part of these Specifications and "Pub 408, latest revision of the Pennsylvania Department of Transportation" and as prescribed in these Detailed Specifications. Special care shall be taken to avoid damage to adjacent sidewalks or appurtenances that are Any damage caused by the Contractor's operations shall be repaired and/or replaced by the Contractor at no expense to the City. Repairs and/or replacements shall be as directed by the Engineer

It shall be understood that payment made for the various items includes all labor, supervision, materials, equipment and services to perform the work, complete, in place, including the removal of surplus material from the project site.

#### BASE BID

#### ITEM 1 - EXCAVATION

The work required under this item shall consist of excavation in the existing parkway area between the existing curb and sidewlak, to a depth sufficient to accommodate the proposed stone, asphalt, sand, and brick specified in Items 2-4 including the removal of and disposal of all excavated materials in accordance with the specifications and within close conformity to the lines and grades established by the Engineer.

Payment for this item shall be made on the basis of the bid unit price per square foot for Excavation which shall also include removal of all surplus material from the project site.

# ITEM 2 - 25 mm SUPERPAVE ASPHALT Base (4") ITEM 3 - 2A CRUSHED STONE AGGREGATE SUBBASE (4")

## ITEM 4 - 24" BRICK SIDEWALK (INSTALLED & SANDED)

#### 1) SCOPE OF WORK

The Contractor shall perform all work as detailed below in strict accordance with: the various Standard City Specifications included as part of these Specifications; Form 408 of the Pennsylvania Department of Transportation; and as prescribed in these Detailed Specifications.

B. It shall be understood that payment made for the various items includes all labor, supervision, materials, equipment, traffic control, and services to perform the work, complete, in place, including removal of surplus material from the project site.

#### 2) DESCRIPTION

A. After excavation is complete to the proper grade, construct a compacted 4" PA No.2A Modified Material Subbase (on a properly prepared sub-grade). All construction and materials shall be in accordance with Sections 210 and 350 of the Form 408 Specifications.

NOTE: If the alternate bid street trees are awarded, the trees shall be planted prior to construction of the brick sidewalk (see specifications below).  $6.5' \times 10'$  tree wells shall be formed at the tree locations determined by the Engineer. If the alternate bid street trees are not awarded,  $6.5' \times 10'$  tree wells shall be formed at locations determined by the Engineer.

Payment for this item will be made on the basis of the bid unit price per square foot of sub-base constructed including Modified Material and sub-grade preparation. However, no payment for this item will be made until the Super Pave asphalt base course is constructed thereon.

B. After completion of the 2A subbase to the proper grade, construct a properly compacted 4" 25 mm Superpave asphalt base. All construction and materials shall be in accordance with Section 309 of the Form 408 Specifications.

Payment for this item will be made on the basis of the bid unit price per square foot of asphalt base constructed

C. After completion of the 4" 25 mm Superpave base course, construct the 24" Brick Sidewalk. Grade shall match existing adjacent sidewalk and as directed by the Engineer.

Brick shall be Pine Hall Brick, Rumbled Pavers, Rumbled Full Range 552550 2 1/2" x 4" x 8" tumbled after firing. Bricks shall be laid evenly edge-to-edge in a double basket pattern on a thin sand bedding placed over the Superpave asphalt. After initial placement of the bricks, spread sand over the bricks and compact using a mechanical vibratory compactor. During compaction, the surface of the

bricks shall be protected from damage. Following compaction of the bricks, fine sand shall be broomed diagonally across the bricks to fill any voids between them. All bricks installed shall be sealed with an appropriate sealer approved by the Engineer.

Included and incidental to this work shall be resetting of the granite curb as necessary and resetting all appurtenances including traffic sign poles, gas valve covers, and electric junction box.

Payment for this item will be made on the basis of the bid unit price per square foot of  $2^1/_4$ " brick sidewalk installed, sanded, and sealed.

#### 3) SUPERVISION

A. The Contractor shall provide qualified supervision of all subcontractors at all times while working under this contract. The supervisor shall be authorized by the Contractor to accept and act upon all directives issued by the City.

#### 4) PROPERTY DAMAGE

- A. Special care shall be taken to avoid damage to adjacent curb and sidewalk or other appurtenances that are to remain.
- B. Any damage caused by the Contractor's operations shall be repaired and/or replaced by the Contractor at no expense to the City. Repairs and/or replacements shall be as directed by the Engineer.

#### 5) PUBLIC SAFETY

- A. The Contractor shall be responsible to supply adequate barricades, flaggers, signs, cones, warning devices, and any other materials necessary to protect motorists and pedestrians during the performance of this contract.
- B. It shall be the Contractors responsibility to ensure that all subcontractors adhere to these requirements. All cones, signs, and barricades must conform to PennDOT Publication 213, 67PA Code, Chapter 212.

#### ALTERNATE BID

#### ITEM 1 - STREET TREES

#### 1) SCOPE OF WORK

A. These specifications, including drawings and plant materials lists, apply to those items necessary for and incidental to the execution and completion of planting as indicated herein.

- B. All labor, supervision, equipment, materials, and supplies necessary for the execution of the work shall be provided for by the Contractor at no additional cost to the City. The Contractor shall furnish all materials on the plant list and shall plant, prune, install biobarriers, mulch and maintain every tree. Contractor shall attend a pre-construction meeting to be held at a mutually agreeable date.
- C. Reasonable care shall be exercised during excavation, planting, filling, grading, and clean-up, to protect all existing trees, shrubs, and other specified vegetation, and other site features, improvements, structures, and utilities from damage.

#### 2) APPLICABLE SPECIFICATIONS AND STANDARDS

- A. American Standard for Nursery Stock, ANSI Z60.1. most current edition. American Nursery and Landscape Association, 1000 Vermont Ave. NW, Suite 300, Washington, D.C. 20005
- B. American National Standard for Tree Care Operations, ANSI A300-most current edition.
  International Society of Arboriculture, PO Box 3129, Champaign IL 61826-3129
- C. Index of Garden Plants: The New Royal Horticultural Society Dictionary. By Mark Griffiths. 1994. Timber Press, Inc. Portland OR.
- D. American National Standard for Arboricultural
  Operations-Safety Requirements, ANSI Z-133.1, most
  current edition. International Society of Arboriculture,
  PO Box 3129, Champaign, IL 61826-3129

#### 3) PLANTING SEASON

- A. Planting shall be done within the following dates:
  - 1) Spring planting: March 15 to June 1
    Or
  - 2) Fall Planting: September 15 to December 15
- B. If special conditions exist that warrant a variance in the above planting dates, a written request shall be submitted by the Contractor to the City Forester stating the special conditions and the proposed variance. Permission for the variance will be granted at the discretion of the City Forester.
- C. No planting shall be done when the soil is excessively wet, frozen, or otherwise in unsatisfactory condition for working, as determined by the City Forester.

#### 4) MATERIALS

A complete list of plants including a schedule of quantities, sizes, and other requirements is included. In the event that discrepancies occur between quantities of plants indicated in the Plant List, and as indicated on any Drawings, the plant quantities indicated on the Drawings shall govern. Acceptance of the Contract carries with it the assumption that the Contractor is able to supply all plant materials indicated in the Plant List, on the Drawings, and as specified. The Contractor shall furnish a written list of the proposed sources of nursery stock. Such a list shall be furnished with completed bid documents. Such list may not be added to or altered without the consent of the City Forester. No substitutions of plant material will be permitted without the approval of the City Forester. Substitutions shall be approved by the City Forester in writing. When sources for plant materials are located by the City Forester, there shall be no substitutions, and those sources shall be used.

#### TREES

All plant material shall conform to the requirements of the plant list and shall be true to the botanical names and standards as established by the current editions of American Association of Nurserymen Horticultural Standards, American Standard for Nursery Stock, and Index of Garden Plants. All plants shall be true to species and variety specified and nursery grown in accordance with good horticultural practices under climatic conditions similar to those in the locality of the project for at least 2 years. They shall have been freshly dug (during the most recent favorable harvest season). Plants shall be so trained in development and appearance as to be unquestionably superior in form, compactness, and symmetry. They shall be sound, healthy, vigorous, well branched and densely foliated when in leaf and free of disease and insect adults, eggs, pupae or larvae. They shall have healthy, well developed root systems and shall be free from physical damage or other conditions that would prevent thriving growth. Trees shall be free of branches to a point not more nor less than approximately fifty (50%) percent of their height. All plants shall be balled and burlapped, single stemmed, tree form unless otherwise specified.

Trees with multiple leaders, unless specified, will be rejected. Trees with damaged, cut, or crooked leaders, included

bark, abrasion of bark, sunscald, disfiguring knots, insect damage, mold, prematurely opened buds, or cuts of limbs over ½ inch diameter that are not completely callused are cause for rejection.

Balled and burlapped plants shall be dug with solid balls of standard size, the balls securely wrapped with non-synthetic, untreated, biodegradable burlap, and tightly bound with non-synthetic, biodegradable rope or twine. Alternatively, they may be placed in wire baskets lined with non-synthetic, untreated, biodegradable burlap and tightly bound with non-synthetic, biodegradable rope or twine. Root collar shall be apparent at surface of ball. Bare root plants shall have a healthy, well branched root system characteristic of the species and with adequate spread.

Containerized plants shall be well established in the container with a root system sufficiently developed to retain its shape and hold together when removed from the container. Plants shall not be pot bound, nor have kinked, circling, or bent roots. Root collar shall be apparent at surface of ball.

Plants shall conform to the measurements specified, except that plants larger than those specified may be used if approved by the City. Use of larger plants shall not increase the contract price nor allow the Contractor to use smaller than specified material on other plants. If larger plants are approved, the root ball, root spread, or container shall be increased in proportion to the size of the plant.

Root collar shall be apparent at surface of root ball. Caliper measurements shall be taken on the trunk 6 inches above the root collar for trees up to 4 inches in caliper, and 12 inches above the root collar for trees over 4 inches in caliper. Height and spread dimensions specified refer to the main body of the plant and not from branch tip to branch tip. Plants shall be measured when branches are in their normal position. If a range of size is given, no plant shall be less than the minimum size, and no less than 50 percent of the plants shall be as large as the maximum size specified. Plants that meet measurements but do not possess a normal balance between height and spread shall be rejected.

Substitutions of plant materials will not be permitted unless authorized in writing by the City Forester. If proof is submitted, substantiated in writing, that a plant specified is not available, consideration will be given to the nearest available size or similar variety, with a corresponding adjustment of the contract price. The contractor shall submit request for substitution not less than 30 days prior to the scheduled start of the planting.

- B. All plants shall be labeled by size and scientific plant name as listed in the current edition of Index of Garden Plants. Labels shall be attached securely to all plants, bundles, and container of plant materials when delivered. Plant labels shall be durable and legible, with information given in weather-resistant ink or embossed process letters. All plants of patented variety shall bear the official tag of patent number. Trees not bearing tags and/or patent tags shall not be accepted.
- C. Mulching material shall consist of licorice root or shredded hardwood bark and shall be free of material injurious to plant growth.
- D. Water shall be provided by the Contractor and be suitable for irrigation and free from ingredients harmful to plant life.
- E. Trunk wrapping material, if specified, shall be perforated drainage tubing or similar material approved by the City, large enough in diameter to prevent abrasion of the trunk and to allow air circulation between the tubing and the trunk.
- F. Guying and staking materials, if specified, shall be as follows:

  Stakes shall be 6' to 8' long sections of unflanged metal or 2" by 2" hardwood. Support ties shall be 2" or wider bands of polypropylene, or elasticized or webbed strapping. Ground anchors shall be arrowhead shaped earth anchors of malleable iron castings, aluminum castings, or stamped steel.
- G. A Typar Bio Barrier Root Control System shall be installed with the planting of all trees. The root barrier shall be a minimum of eighteen (18") inches wide. Any substitution shall be approved by the City Forester. The root-control system is to be installed per manufacturer's recommendations. Tree openings in the sidewalk shall have the bio-barrier installed along the face of the tree opening which is parallel to the street and closest to the property line, overlapping the nearest two corners by approximately four (4") inches. Where trees are to be planted in a parkway or planting strip between curb and sidewalk, the barrier shall be installed along the sidewalk edge closest to the curb and centered on the root source. The length of the barrier shall be a minimum length equal to the spread of the tree canopy at maturity plus ten (10') feet.

#### 5) CERTIFICATION

A. All plant materials, shipments, and deliveries shall comply with state and federal laws and regulations governing inspection, shipping, selling, and handling of plant stock. A certificate of inspection, or a copy thereof, for injurious insects, plant diseases, and other plant pests shall accompany each shipment or delivery of plant material. The certificate shall bear the name and address of the source of the stock.

#### 6) SELECTION AND TAGGING

- A. Plants shall be subject to inspection for conformity to specification requirements and approval by the City at their place of growth prior to award of bid. The City Forester accompanied by the lowest bidding contractor or his representative, shall inspect the trees offered by the contractor to fulfill the contract. The nursery must be located at a distance no greater than a 150-mile radius from the City of Bethlehem. Inspection beyond the 150-mile radius shall be done at the expense of the Contractor.
- B. Once the trees have been accepted and the Contract has been awarded, the City Forester will tag and reserve the trees that are acceptable to the City. City tags will remain on the trees until the time of final inspection. A written request for the inspection of plant material at their place of growth shall be submitted to the City Forester at least ten (10) working days prior to digging. This request shall state the location of the nursery and the quantity and name of plants to be inspected. The City may refuse inspection at this time if a sufficient quantity of plants is not available for inspection.
- C. All plants shall be selected and tagged by the City at their place of growth. All plants to be considered for inspection shall be legibly tagged with the correct name and cultivar.
- D. Plants shall be inspected upon delivery, and the City reserves the right to reject any plants that do not meet the standards or that have been damaged during shipment. Such approval shall not impair the right of inspection and rejection during the course of the work.
- E. The Contractor or the Contractor's representative shall be present at all inspections.
- F. The City shall be the sole judge of acceptability of stock at any time during the course of this contract. Any plant delivered to the contract site which does not satisfy all the requirements of this specification shall be removed from the site by the Contractor and replaced by materials meeting the requirement of the specification.

#### 7) DIGGING AND HANDLING OF PLANT MATERIALS.

A. Plants to be balled and burlapped shall be dug with firm, natural balls of earth of diameter not less than that recommended in the current edition of American Standard for Nursery Stock, and of sufficient depth to include fibrous and feeding roots. The root collar shall be within the top 2" of the soil ball. Balled and burlapped plants with manufactured balls or balls that are dry, cracked, or broken before or during planting operation will not be accepted.

#### 8) TRANSPORTATION AND STORAGE OF PLANT MATERIAL

- A. Fresh dug material is given preference over plant material held in storage. Plant material held in storage will be rejected if excessive growth or dieback of branches has occurred in storage.
- B. Branches shall be tied with rope or twine only, and in such a manner that no damage will occur to the bark and branches.
- C. During transportation of plant material, the Contractor shall exercise care to prevent injury and drying out of the trees. Should the roots become dried out, large branches broken, balls of earth broken or loosened, or areas of bark torn, the City Forester may reject the injured tree(s) and order them replaced at no additional cost to the City.
- D. The root systems of each load of bare root stock sent from the storage facility shall be adequately covered with wet soil, sawdust, wood chips, moss, peat, straw, hay or other acceptable moisture-holding medium, and shall be covered with an open-mesh tarpaulin or canvas. Loads that are not protected in the above manner may be rejected.
- E. Plants must be protected at all times from drying winds or sun. Plants shall be planted promptly after arrival at the site(s). Plants that cannot be planted immediately on delivery shall be kept shaded, well protected with soil covered by wood chips or other acceptable material, and kept well watered. Plants shall not remain unplanted longer than 3 days after delivery without permission from the City. Plants shall not be bound with wire or rope at any time so as to damage the bark or break branches. Plants shall be lifted and handled with suitable support of the soil ball to avoid damage.
- F. The City Forester shall be notified of the start of the planting operation not less than five (10) working days in advance.

#### 9) EXCAVATION OF PLANTING AREAS

- A. The City will specify all planting areas. The Contractor will notify PA One Call to verify location of underground utilities before excavation begins. The Contractor shall be responsible for assuring that utility marking is complete prior to excavation. The Contractor shall be responsible for all damage resulting from neglect or failure to comply with this requirement.
- B. Any underground obstruction, other than underground utilities, shall be removed to the depth and width necessary to permit proper planting and future growth of the trees. Any resulting depressions or pockets shall be filled with approved soil and thoroughly tamped before proceeding with the planting.
- The Contractor shall excavate planting areas as shown on С. the drawings, if specified. Excavation may be done by shovel, backhoe, or stump grinder, but a soil auger may not be used. The planting hole shall be at least 3 times the diameter of the soil ball and the soil shall be loosened at least one ball diameter's distance beyond the hole to a depth of 6'' to 12". If the planting site is restricted such as between the curb and sidewalk, an equivalent rectangular area shall be dug per the dimensions specified on the Plan. The root ball shall be placed in the planting hole on a pad of undisturbed or firmly tamped soil to a depth corresponding to the distance from the bottom of the root ball to the root collar or slightly higher. Any glazed areas within the planting hole shall be sufficiently roughened prior to backfilling.
- D. Excavated planting holes that will be left open when work is not in progress or pose an immediate and considerable hazard to pedestrians or vehicles shall be adequately barricade with appropriate warning devices.
- E. The Contractor shall notify the City, in writing, of soil conditions or other obstructions the Contractor considers detrimental to tree growth. Such conditions shall be described, as well as suggestions for correcting them. Proper water drainage must be assured.
- F. Where soil conditions or below ground obstructions which cannot be remedied are encountered, the City shall designate alternate planting locations. The City shall bear any costs associated with such relocation.
- G. Where trees are to be planted in existing wells with tree grates the contractor shall be responsible for the removal and replacement of said grates during the course of the work. The entire area beneath the grate shall be free of weeds and mulched as stated in Planting Operations.

- 10) <u>PLANTING OPERATIONS-</u> ANSI A-300 Transplanting Standards and ISA Best Management Practices Tree Planting.
  - A. Plants shall not be thrown or bounced off the truck or loader to the ground and must be protected from excessive vibrations. Plants, shall not be dragged, lifted or pulled by the trunk, foliage, branches or any parts in a manner that will loosen the root ball or cause damage to the plant.
  - B. Plants shall be set with the root collar at or slightly above finished grade. Plants shall be centered and set plumb so that they will be at the same level at which they previously grew. Plants shall be set so that they are at the same depth 1 year after planting.
  - C. Bare root plants shall have their roots spread into a natural position, free of bunching, kinking, or circling. All broken or damaged roots shall be cut back to the point where they are clean and free of rot. No other root pruning shall be done.
  - D. For plants in plastic, metal, or biodegradable containers, the containers shall be removed before planting. If roots are crowded or coiled on the bottom, sides, or surface of the root ball, they shall be gently separated from the edges or surface.
  - E. For all plants moved with a tree spade, all holes and cavities between the ball and the surrounding soil shall be filled. Glazed planting hole surfaces shall be sufficiently roughened prior to backfilling. The ball shall be thoroughly soaked with water after planting.
  - F. After the plant has been set and one half of the backfilling complete so as to support the root ball, ropes, strings, twine burlap and any other wrappings shall be removed from at least the top one-half of the root ball. If the root collar is deep in the ball, remove excess soil away from the trunk using hands, not tools.
  - G. Planting holes shall be backfilled using excavated soil wherever possible. When holes are two-third full, they shall be thoroughly watered to eliminate air pockets. After this initial watering, backfill with excavated soil to the top of the hole and water to settle. Prevent puddled soil conditions by avoiding compaction once the soil is wet. A shallow saucer shall be formed around each tree by placing a three to four (3' to 4") inch high ridge of soil just outside the diameter of the rootball as specified in the planting detail.
  - H. Planting areas shall be finish-graded to conform to drawings, if provided, after settlement has occurred.

- I. All plants shall be mulched over the root system with a two to four (2''-4'') inch layer of mulch immediately after planting. Mulching material shall be pulled back no less than three (3'') inches from the trunk and no more than six (6'') inches from the trunk.
- J. Plants shall be thoroughly watered after planting is completed.
- K. All twine, ties, rope, guards, and wrappings, shall be removed from plants after planting. City tags and plant labels shall remain until inspection and acceptance of the planting. City tags and plants labels are to be removed by the Contractor after acceptance of the planting by the City Forester.

#### 11) GUYING, STAKING WRAPPING, AND PRUNING

- A. Only those plants designated by the City shall have trunk protection installed or be staked and/or guyed.
- B. Only trees so designated shall have approved trunk protection installed. The trunk protection shall be secured at the top and bottom of the trunk in a manner so as not to restrict or damage the bark (see specification 4-E). The Purchaser will be responsible for removing trunk protection after a one year period.
- C. Only trees so designated shall be staked and guyed. Ties made of approved material shall be attached directly to the stakes or may be attached to stakes by wire. In no case shall the wire extend around the tree trunk. Ties should be attached loosely enough to allow a small amount of play in the trunk. For drooping stems, ties shall be placed at the point on the stem at which the top can stand up on its own. Stakes shall be installed so as not to damage the roots or root ball of the tree. Ties of a non-abrasive material should be attached loosely enough to allow movement in the wind. Staking and guying shall further conform to the drawings if provided. The Contractor shall be responsible for removing all stakes and guying material after a one year period. All stakes and guying material shall remain the property of the Contractor.
- D. Only dead, damaged or broken branches shall be pruned at planting time. Pruning shall be done according to American National Standard for Tree Care Operations, ANSI A300.

#### 12) CLEANUP

A. Soil, branches, wrappings, rejected plant material, or other debris resulting from any tree planting shall be promptly removed and cleaned up. The work area shall be kept safe and neat at all times until the clean-up is

completed. Under no condition shall the accumulation of soil, branches, or other debris be allowed upon public property in such a manner as to result in a public hazard.

#### 13) ACCEPTANCE

- A. Upon completion of the planting project, the Contractor shall request an inspection of the work by the City Forester to note and correct any discrepancies. Written request for such inspections must be made at least ten (10) days prior to the anticipated inspection date.
- B. Acceptance of plant material by the City shall be for general conformity to specified size, character, and quality, and shall not relieve Contractor of responsibility for full conformity to the contract documents, including correct species.
- C. Upon completion and reinspection of all repairs or renewals necessary in the judgment of the City, the City shall certify, in writing, that the work has been accepted. Should the planting of trees—under this contract be extended from one planting season to the next, acceptance will be issued only after the whole planting contract has been completed.
- D. Work may be accepted in parts when the City and Contractor deem that practice to be in their mutual interest. Approval must be given in writing by the City to the Contractor verifying that the work may be completed in parts. Acceptance of work in parts shall not waive any other provision of this contract.

#### 14) GUARANTEE PERIOD AND REPLACEMENT

- A. The Contractor shall guarantee all plants to be healthy and in flourishing condition for two (2) years from the date of acceptance. The guarantee does not include vandalism, storm damage, animal damage or mechanical damage unrelated to Contractor activities.
- B. The City Forester will inspect the plantings during and at the end of the first growing season after the planting has been completed. Inspections will be held during and at the end of the guarantee and maintenance periods. These inspections will be made by the City Forester accompanied by the Contractor. After each of these inspections the Contractor shall replace all plants that are dead, or are, in the opinion of the City Forester, in an unhealthy condition or do not show a natural growth habit for the species. Unacceptable plants shall be promptly removed form the site and shall be replace by the Contractor at no

additional cost to the City. All replacement plants shall be furnished and planted in accordance with the requirement of these specifications. Plants which settle more than two (2") inches below the adjacent grade shall be raised, additional planting mixture placed, and surrounding sod areas disturbed shall be replaced, all at no cost to the City. In addition, the tree planting sites shall be checked for the need of weeding.

- C. The Contractor shall remove and replace, without cost, and as soon as weather conditions permit, and within a specified planting period, all plants not in a healthy and flourishing condition as determined by the City any time during the guarantee period. Replacements shall be subject to all requirements stated in this specification.
- D. The guarantee of all replacement plants shall extend for an additional period of two (2) years from the date of their acceptance after replacement. In the event that a replacement plant is not acceptable during or at the end of the said extended guarantee period, the City may elect subsequent replacement or credit for that item.
- E. The Contractor shall be responsible for all maintenance of the trees during the guarantee period.

#### 15) MAINTENANCE

- A. The Contractor shall properly care for all plantings both prior to acceptance by the City and for a period of twenty four (24) months thereafter. The Contractor shall water, weed, treat, cultivate, and perform any maintenance work as necessary to keep the plants viable and healthy and the planted areas neat and attractive.
- B. All trees shall be watered as necessary between April 1 and November 1, beginning with acceptance of the planting and continuing until the termination of the maintenance period. The rate of flow shall not cause erosion to the surrounding areas. Contractor shall furnish all water and necessary hoses, wrenches, nozzles, couplers, Gator Bags, and other equipment.
- C. All planted areas shall be maintained free of weeds. Herbicides may be used but only in accordance with the manufacturer's recommendations. At no time shall weed growth be allowed to exceed six (6") inches high. Use of herbicides shall not relieve the Contractor of responsibility for replacing plants under the guarantee requirements.
- D. The Contractor, one month prior to the end of the Guarantee and Maintenance period, shall remove guying material from

each tree as directed by the City Forester. This is applicable only if the Contractor chooses to use guying material in the installation of the trees. Guying of trees is not required by the City in these Detailed Specifications.

E. The Contractor shall at all times, while work is being performed, have a competent foreman on the site capable of following the directions given by the City's Forester.

Specific maintenance requirements, in addition to those mentioned above are as follows:

The use of Gator Bags or approved equal shall be employed to provide water to newly planted trees. Trees shall receive 1 inch of water per week either by rain or irrigation. It shall be the Contractor's responsibility to monitor trees for watering needs and to provide water as specified.

#### 16) FINAL INSPECTION AND ACCEPTANCE

At the end of the guarantee period and upon written request of the Contractor, the City shall inspect all guaranteed work for final acceptance. The request shall be received at least ten (10) working days before the anticipated date for final acceptance. Upon completion and re-inspection of all repairs or renewals necessary in the judgment of the City at that time, the City shall certify, in writing, that the project has received final acceptance.

Payment for these items will be made on the basis of the respective bid unit prices per tree planted.

# CITY OF BETHLEHEM, PENNSYLVANIA DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING

# **EXCAVATION, TRENCHING AND BACKFILLING FOR UTILITY SYSTEMS**

# **INDEX**

÷	G CW 1	Page
l.	Scope of Work	ETB-1
II.	Permit, Laws and Ordinances	ETB-1
III.	Excavation	ETB-1
	A. General	
	1. Sub-surface Utilities	2
	2. Prompt Repair of Service Pipes	2
	3. Execution of Work	2
	4. Extra Excavation	2 2 2 2 3
	5. Excavation Below Engineer's Grade	3
	6. Excavation for Manholes	3
	7. Unstable Soil	3
	8. Piling of Materials and Care of Structure	3
	9. Drainage	4
	10. Care of Existing Structures	4
	11. General Maintenance for One Year	4
	12. Protection of Work	4-5
	13. Night and Weekend Work	5
	14. Proper Methods and progress of Work	5
	B. Trench Excavation	
	1. Width of Trench	5
	2. Bell Holes	6
	3. Limit of Trench Opened	6
	4. New Trenches Not to be Opened When	6
	Earlier Trenches are neglected	Ü
	5. Provisions for Flow	6
	6. Notification of Broken Pipe Main	6
	o. Hoursday of Broken Tipe Main	Ü
	C. Tunneling	6-7
	D. Presing and Sharing	7
	D. Bracing and Shoring	/
	E. Rock Excavation	
	1. Definition	7
	2. Blasts, Precautions, Liabilities	7
	3. Rock Measurement in Trenches	8

(Revised April 1991)

IV.	Tests	ETB-8
V.	Backfilling	ETB-8
	A. General	8
	B. Bedding	8
	C. <u>Trenches – Not under Roadway or Area to be Paved</u>	8
	D. Trenches Under Roadway and Areas to be Paved	9
	E. Manholes and Other Structures	9
	F. Pipes and Culverts in Fill Section or Projection into Fill Sections	9
	G. Maintenance	9
VI.	Replacing Street Pavements	
	A. Type "A" Street Pavement Replacement	10-11
	B. Type "B" Street Pavement Replacement	11-12
	C. Type "C" Street Pavement Replacement	12
	D. Full-Depth Deep-Strength Pavement Replacement	13
	E. Replacement of Curb and Sidewalk	14
VII.	Clean-up	14

#### I. SCOPE OF WORK

The following specifications shall govern the Contractor in furnishing all materials, labor and equipment for excavation, trenching and backfilling for utility systems, including replacement of pavement where specified. "Utility Systems" shall include underground piping and appurtenances for gas, gasoline, oil, water distribution systems, storm water sewers or drains, and sanitary sewers or drains, and sanitary sewage collection systems.

#### II. PERMITS, LAWS AND ORDINANCES

The Contractor shall abide by the provisions of Article 903 of the Codified Ordinances of the City of Bethlehem, which is on file in the Office of the City Clerk and the City Engineer, and under the terms of said Ordinance he shall take out and pay for an Excavation Permit; subject to such notifications as may be otherwise specified if deemed in the best interest of the City.

The Contractor shall keep himself fully informed of all existing and future ordinances and regulations, state and national laws in any manner affecting the work herein specified, and he shall at all times observe and comply with and shall cause his agents and employees to observe and comply with and shall cause his agents and employees to observe and comply with said ordinances, laws and regulations and shall protect and indemnify the City and its Officers and Agents against any claims or liability arising from or based on the violation of any such laws, ordinances, regulations, etc.

In particular, work shall conform to the requirements of the Department of Labor and Industry, "Regulations for Excavation and Construction."

#### III. EXCAVATION

#### A. General

The Contractor shall do all excavations of whatever substances encountered to the depth shown on plans or cross sections. Excavated materials not required for fill or backfill shall be removed from the site as directed by the Engineer.

#### 1. Sub-Surface Utilities

Location of all sub-surface utilities and appurtenances or any other structures where indicated on plans have been compiled from various sources of information made available to the City. This data is intended primarily for the benefit of the Contractor and the City will not be responsible for the accuracy thereof or for any errors or omissions.

In accordance with HB 2543 (Act No. 287) as amended by HB 1735 (Act 172) the Contractor shall notify all utilities that he will be making an excavation at least three (3) working days prior to the day of beginning such work so that each Utility Company can mark or locate their lines for the Contractor.

The Contractor shall indicate that he has notified all utility companies by supplying to the City's representative on the project site the Serial Number received from the Act 172 call.

#### 2. Prompt Repair of Service Pipes

When service pipes supplying sanitary sewer, water or gas to adjoining houses become broken during the excavation or other work, the Contractor shall cause them to be repaired at once at his own expense. Delays such as would result in adjoining houses having to go overnight without sanitary sewer, water or gas or for a needlessly long period during the day will not be tolerated. The City reserves the right to remedy such delays or neglect by ordering outside parties to make such repairs at the expense of the Contractor and without prior notice.

#### 3. Execution of Work

The Engineer shall have the power to direct the order and sequence of the work, which in general shall be such as to bring to a successful completion in the most advantageous manner, the several parts of the work.

#### 4. Extra Excavation

In case it is necessary in the judgment of the Engineer to excavate to an extra depth below the grade shown on the plan to secure a good foundation, it shall be done as directed, and the Contractor shall replace the excavated materials with 2A Material which shall be thoroughly compacted.

#### 5. Excavation Below Engineer's Grade

In case the excavation has been carried inadvertently below the grade given or indicated, or finally determined by the Engineer, the bottom shall be filled to the required grade and form with 2A Material thoroughly compacted, as may be directed, and at the expense of the Contractor.

#### 6. Excavation for Manholes

Excavation for manholes and other accessories shall have a minimum of twelve inches (12") and a maximum of twenty-four inches (24") of clearance of all sides.

#### 7. Unstable Soil

Unstable soil shall be removed and replaced with 2A Material which shall be thoroughly compacted. The Engineer shall determine the depth of removal of the unstable soil and the Contractor will be paid extra for removing the unstable soil. See paragraph 4 – Extra excavation.

#### 8. Piling of Materials and Care of Structures

All excavated materials shall be so placed as not to endanger the work, and so that free access may be had at any time to all parts of the trenches and to all hydrants and gates on pipes in the vicinity. Such material shall be kept neatly piled on the side of the trench or carried back and immediately used as backfilling so as to inconvenience as little as possible public travel and so to give entrance and exit to vehicles. All fences and other structures in the vicinity of the work shall be protected and if damaged shall be repaired or replaced at the Contractor's expense. All trees in the vicinity of the work shall be protected. Where required in narrow alleys or crowded streets, excavated materials shall be confined to as narrow limits as practicable and to this end suitable wooden fences or retainers shall be provided and used by the Contractor at his own expense. Reasonable and satisfactory provision shall be made for travel on sidewalks, crosswalks, crossings, streets, roads, railroads, and private ways. Safe wooden bridges, where required, shall be built and maintained at the Contractor's expense, for both vehicular and pedestrian traffic in crossing excavations.

#### 9. De-Watering

The Contractor shall furnish a sufficient pumping plant and provide and maintain, at his own expense, satisfactory de-watering whenever needed in the excavation during the progress of the work and at its completion for final inspection. Direction of the de-watering discharge to be as approved by the Engineer. Ground adjacent to all excavations shall be graded to prevent water from running in to open excavation.

#### 10. Care of Existing Structures

Care shall be taken not to remove, without the consent of the Engineer, any sewers, culverts, water, gas or other pipe or poles or structures. When crossing pipes or structures, or in running parallel with or near them, they shall be securely hung, braced or supported in place until the work is completed. Whenever it is necessary to interfere with said structures, the Contractor, at his own expense, shall maintain their respective services, and if necessary shall lay temporary water, gas or other pipes or structures.

He shall repair all damages done to any said structures through his acts or neglect and shall keep them in repair until one year after the completion of the work. He shall leave them in good condition as they were previous to the commencement of the work.

#### 11. General Maintenance for One Year

Any structural or mechanical defect appearing in any portions of the sewers, water mains, or other structures or of the trench or paving above, within one year after acceptance of the work, shall be corrected at once by the Contractor at his own expense.

#### 12. Protection of Work

The Contractor, at his own expense, shall place sufficient warning lights on or near that work and keep them burning from sunset to sunrise, shall erect suitable railings or barriers, and shall provide watchmen on the work day or night, as required and deemed necessary for the safety of the work, the public and adjoining property. The Engineer reserves the right to remedy any neglect on the part of the Contractor as regards to the protection of the work which may come to his attention, after twenty-four (24) hours notice in writing, except in cases of emergency,

when he shall have the right to remedy any neglect without notice, and to deduct the cost of such remedy from money due to the Contractor. But the Contractor shall be liable for all damages to persons or property due to improper protection of the work.

#### 13. Night, Weekend Work and Holidays

No work shall be done between the hours of 6:00 P.M. and 6:00 A.M. nor on Saturday, Sunday, or Holidays except as is necessary for the proper care and protection of work already performed or except in case of emergency and then only with the permission of the Engineer.

#### 14. Proper Methods and Progress of Work

The quality and workmanship of the work covered by these specifications are to be the best throughout, and if at any time before the commencement or during the progress of the work the materials or appliances, or the number of laborers, trucks or equipment used appear to the Engineer as insufficient or improper for securing the quality of work required, or the required rate of progress, he may order the Contractor to increase their efficiency or improve their character or increase the rate of progress, and the Contractor shall conform to such order; but the failure of the Engineer to demand any increase of such efficiency or improvement shall not release the Contractor from his obligation to secure the quality of work or the rate of progress specified.

#### **B.** Trench Excavation

#### 1. Width of Trench

The sides of trenches shall, in general, be vertical and the width of trenches shall generally be eighteen inches (18") minimum and thirty inches (30") maximum greater than the outside diameter of the pipe barrel, or as specifically required for various other underground utility installations. The bottom of the trench for sewers and culverts shall be excavated to four inches (4") under the bottom of the pipe. (6" for rock)

Width of trench, or shape of trench, is predicated however on the depth of the excavation and must conform to the regulations of the Department of Labor and Industry.

#### 2. Bell Holes

Bell holes shall be excavated accurately to size by hand in advance of laying the pipe; and shall be large enough to enable proper jointing of the pipe.

#### 3. Limit of Trench Opened

Not more than one hundred feet (100') of trench shall be opened in advance of pipe laying unless permitted by the Engineer.

#### 4. New Trenches Not to be Opened When Earlier Trenches are Neglected

It is to be distinctly understood that new trenches will not be opened when earlier trenches need backfilling, or labor is needed to restore their surface to a safe and proper condition. The Engineer will refuse additional lines and grades for new trenches should the Contractor fail to meet the requirements herein specified as to backfilling and resurfacing.

#### 5. Provision of Flow

The Contractor, at his own expense, shall provide for, temporarily or permanently, as the case may be, the flow of water in all sewers, drains and water courses that may be encountered on the work and in the gutters along the side of or across the work.

#### 6. Notification of Broken Pipe Main

In case of a gas, water or other pipe or gutters or cables or flumes becoming broken in the prosecution of the work the Contractor shall give immediate notice to the proper authorities, and shall be responsible for any damages done to persons or property caused by such breaks, and failure to give prompt notice to the authorities shall make the Contractor responsible for any needless loss of gas, water or other commodity.

#### C. Tunneling

The Contractor shall not be allowed to do any tunneling without obtaining permission from the Engineer and then only according to methods approved by the Engineer. Permission will be given where necessary for reasons of non-interference with traffic or with sub-surface structures, or where a line is to be laid behind a curb, across a paved street, under railroad tracks, or where, in the

opinion of the Engineer, it is necessary to tunnel short sections on account of proximity of adjacent walls or structures.

State permits, where required, shall be obtained by the City, however, the Contractor shall be required to pay for all inspection costs billed to the City.

#### D. Shoring and Bracing

The Contractor shall furnish, at his own expense, and put in place and maintain such sheathing, shoring, bracing, cofferdams, etc. as may be required to support thoroughly the side of the excavation, whether above or below grade of sewers, water mains, or other structures and to prevent any movement which might injure working personnel, or the sewers, or water mains, or other structures, diminish the width necessary for proper drainage, or otherwise injure or delay the work or interfere with adjoining structures or operations. The above shoring, bracing or other material must conform to the regulations of the Department of Labor and Industry.

#### E. Rock Excavation

#### 1. Definition

Only such rock in trench or tunnel or sub grade as cannot be readily removed with a pick and shovel or power shovels and requires, in the judgment of the Engineer, blasting for its removal, and which has been measured by the Engineer, and all boulders of one-third cubic yard or more in volume which are removed from the work, will be estimated as rock excavation.

Excavation in rock shall be carried six inches (6") below the bottom of the pipe. Bedding material and 2A Material for backfill shall be furnished at the Contractor's expense.

#### 2. Blasts, Precautions, Liabilities

When explosives are used, work shall be executed by experienced blasters licensed by the Department of Labor and Industry. Explosives shall be stored, handled and used in accordance with regulations as set forth by the Department of Labor and Industry, Commonwealth of Pennsylvania.

Caps or other explosives shall in no case be kept near the place where dynamite or other explosives are stored; and precaution against accident from blasting shall be entirely satisfactory. The Contractor shall be liable for all damages to persons or property caused by a blast or explosive. No blasting shall be allowed unless the Engineer or his representative is present. A blaster permit, issued by the City is required for all blasting done within the City.

#### 3. Rock Measurement in Trenches

Trenches in rock excavation shall be measured as having a width of thirty inches (30") greater than the outside diameter of the barrel of the pipe and with vertical sides; the depth of the trench in rock excavation shall be measured to six inches (6") below the outside bottom of the pipe barrel if rock continues to the bottom of the trench; otherwise, the rectangular area from the surface of the rock to its bottom shall be measured. Bedding material plus 2A Material shall be used for the backfill and tamped thoroughly. Additional rock removed from outside the lines of measurement, herein indicated shall not be paid for. All rock shall be removed from the area.

#### IV. TESTS

Tests for workmanship on utility lines shall be conducted in accordance with the applicable utility specifications.

#### V. <u>BACKFILLING</u>

#### A. General

After utility lines have been tested and approved, backfilling shall be done with approved material as outlined below.

#### B. Bedding

All water mains and sanitary sewers shall be bedded in a four inch (4") minimum layer of sand or screenings. Backfill of the same material shall then be placed in six inch (6") maximum layers hand tamped until one foot (1") of cover exists over the pipe. Remainder of backfill shall be approved material as outlined below.

#### C. Trenches - Not under Roadway or Areas to be Paved

Approved backfill material shall be placed in one foot (1") maximum layers and compacted after filling one foot (1') above the pipe as previously described.

Water settling will not be permitted at any time. Compaction shall be by an approved mechanical means only.

#### D. Trench Under Roadway and Areas to be Paved

Approved backfill material shall be placed in eight inch (8") maximum layers after filling one foot (1") above the pipe as previously described. Each layer shall then be compacted to the density equal to that of adjacent original material so that pavement can be placed immediately. Compaction shall be with mechanical tamper only. All excavations in paved streets or areas shall be refilled with Penn DOT approved 2A Material thoroughly compacted. Trenches shall be properly backfilled and tamped to sub grade, from which point a suitable base course shall be provided and maintained until resurfacing of the trench or excavation shall take place.

#### E. Manholes and Other Structures

All forms, trash and debris shall be removed and cleared away. Approved backfill materials shall be placed symmetrically on all sides in eight inch (8") layers. Each layer shall be compacted with mechanical tamper only.

#### F. Pipe and Culverts in Fill Section or Projection Into Fill Section

The foundation support shall be as shown on the plans. Where pipe is not structurally supported, unstable material shall be removed. A pipe bed and embankment, if required, shall be constructed of selected material and compacted. Selected material shall be placed symmetrically on each side of the pipe in six inch (6") maximum layers. The materials shall be thoroughly compacted by mechanical tamper only. Layers shall be placed and compacted until a berm is formed at least one pipe diameter on each side of pipe and twelve inches (12") minimum fill over the pipe.

#### G. Maintenance

The Contractor shall make needed replacement to backfill areas until the areas have thoroughly settled itself to the satisfaction of the Engineer. No areas to be paved shall be paved until the Engineer has been satisfied that complete settlement has taken place. The replacement material shall be at the expense of the Contractor.

#### VI. REPLACING STREET PAVEMENT

#### A. Type "A" Street Pavement Replacement (Concrete)

This type replacement shall consist of constructing a minimum of nine inches (9") of Plain Cement Concrete. If the road is to be opened in less than three (3) days, the cement ratio shall be increased as directed by the Engineer.

Existing Pavement Edges shall be cut vertical and removed on a straight line to a Width of not less than twelve inches (12") on each side of the trench opening. Avoid cutting pavement joints; if unavoidable, they shall be reconstructed as original joints.

<u>Sub grade</u> shall be compacted with a mechanical tamper only. Under edges of existing pavement sub grade shall be cut back an additional six inches (6") to a depth of six inches (6") for underpinning and replacement with concrete. The sub grade shall be moistened before concrete is placed.

The minimum width of replaced concrete shall be four feet (4") at interiors and six feet (6') at joints.

<u>Concrete Materials</u> shall conform to the provisions as outlined in the specifications under Plain Cement and Reinforced Concrete Pavement.

Concrete Mix shall be Class AA Cement Concrete according to Section 704.1 Form 408 Commonwealth of Pennsylvania, Specifications Current revision, and shall be so proportioned as to give strength of 3,750 lbs./sq. inch at twenty-eight (28) days, and to give a workable mix, using not less than 6.25 bags of cement per cubic yard and not more than 5.3 gallons of water per bag of cement including free water in the aggregates. Aggregate shall be batched by weight. Cement shall be measured by sacks or by weight, and water shall be accurately measured by volume or weight.

Mixing Concrete ingredients shall be done in a standard type power-operated batch mixer for at least one minute for each cubic yard or under and shall be increased fifteen (15) seconds for each additional one-half (1/2) yard or fraction thereof.

<u>Placing Concrete</u> shall be completed in one layer after sub grade has been prepared. Spading or vibrating shall be done adjacent to forms and joints.

Strike-Off and tamping shall be by mechanical or hand screen.

<u>Longitudinal Floating</u> shall be done with a float at least ten inches (10") wide by twelve feet (12') long.

Straightedge Check shall be made while the concrete is plastic with a ten foot (10') straightedge placed at five foot (5') intervals and overlapping five feet (5') on each check.

<u>Finish Surfacing</u> shall be accomplished by dragging, transversely; followed by transverse brooming before initial set by lightly drawing a steel or barn broom across the surface. Where an asphaltic concrete pavement surface is to be applied, the surface shall have a transverse approved ribbed finish.

Joints and Edges shall be tooled and rounded.

<u>Curing</u> shall be by an approved moist curing method, paper curing method, or by spraying with an approved curing compound.

Joints shall be sealed with asphaltic joint filler applied hot.

Opening to Vehicles will not be permitted for at least seven (7) days after placing concrete, and when using high early strength quick setting Portland Cement, travel will not be permitted for at least three (3) days.

<u>Frost Protection</u> – Concreting will not be continued when the air temperature is below 45° F unless aggregates and/or water heated to produce a placing temperature of the concrete between 60° F and 90°F and unless adequate provisions are made for maintaining protection against freezing of concrete for at least seven (7) days after placing. No concrete will be placed when the falling air temperature reaches 40° F. No concrete will be placed on a frozen sub grade.

#### B. Type "B" Street Pavement Replacement (Bituminous over Stone)

This type shall consist of an eight inch (8") Stone Base Course with two and one-half inch ( $2\frac{1}{2}$ "), Asphaltic Concrete Surface.

Existing Pavement Edges shall be cut vertical and removed on a line not less than twelve inches (12") on each side of the trench and to the proper depth.

Sub grade shall be thoroughly compacted to an even firm foundation.

Base Course using a ballast of No. 2A Material shall be eight inches (8") when thoroughly compacted. The voids shall be filled with stone screenings. It shall be compacted to the full width by rolling with a power roller weighing at least ten (10) tons.

<u>Places Inaccessible</u> to the roller shall be compacted by mechanical tamping only. The surface of the base course shall be maintained in its finished condition until the succeeding pavement is placed.

<u>Asphaltic Concrete Pavement Surface</u> shall consist of two (2) course bituminous concrete pavement as specified hereinafter using Type "C" Street Pavement Replacement.

<u>Sealing</u> of all bituminous joints shall be six inches (6") on either side of the joint with approved bituminous sealer.

#### C. Type "C" Street Pavement Replacement (Bituminous over Concrete)

This type shall cover constructing two and one-half inches (2½") of Asphaltic Concrete Pavement Surface consisting of a plant-mix hot-lay, two course Bituminous Concrete Pavement.

Binder Course shall be one and one-half inch  $(1\frac{1}{2})$  compacted thickness.

<u>Wearing Course</u> shall be one inch (1") compacted thickness conforming to existing type of payement surface.

<u>Bituminous Tack Coat</u> shall be applied on bituminous or Portland Cement base and where trucking or other conditions have injured the bonding qualities of the binder course. It shall be placed only on dry, clean base free from loose foreign materials, when atmospheric temperature is above 50° F and 120° F. Material to conform to State Highway Specifications, Form 408, Section 460.2.

Binder Course shall be laid upon the prepared base to a finished thickness of one and one-half inches (1½"). Placing of hot mix shall be done only when surface is dry and atmospheric temperature is above 40°F and shall not be started until the prime coat has set. Contact Surfaces of all structures shall be painted with hot bituminous material as used in mixture. Compacting shall be done with a roller weighing not less than ten (10) tons. Joints between new mixture and previously placed mixture shall be cut back to a clean vertical surface and painted with hot bituminous material as sued in mixture.

Wearing Course or Surface Course shall be laid upon the binder course to a finished compacted thickness of one inch (1").

<u>Joints</u> shall be at least one foot (1') from joints in binder course.

Outside Edges of Pavements shall be trimmed neatly to line while the course is being finished.

<u>Protection of Pavements</u> from use by vehicular traffic of any kind shall be maintained after final rolling until it has cooled and hardened for a minimum period of six (6) hours.

<u>Sealing</u> of all bituminous joints shall be six inches (6") on either side of the joint with approved bituminous sealer.

Finished Surface shall be lightly sanded.

## D. Full-Depth Deep-Strength Pavement Replacement

This type shall consist of either a six inch (6") or seven and one-half inch ( $7\frac{1}{2}$ ") base of bituminous concrete with a one and one-half inch ( $1\frac{1}{2}$ ") surface course. The seven and one-half inch ( $7\frac{1}{2}$ ") pavement shall be used on residential streets and the nine inch (9") pavement shall be used on arterial streets.

Existing Pavement Edges shall be cut vertical and removed on a line not less than twelve inches (12") on each side of the trench and to the proper depth.

Sub grade shall be thoroughly compacted to an even firm foundation.

Base Course shall consist of constructing either a two (2) course hot-mixed, hot-laid, bituminous base course seven and one-half inches (7½") compacted depth or a one (1) course hot-mixed, hot-laid, bituminous concrete base course six inches (6") compacted depth on a previously prepared sub grade.

<u>Places Inaccessible</u> to the roller shall be compacted by mechanical tamping only. The surface of the base course shall be maintained in its finished condition until the succeeding pavement is placed.

Asphaltic Concrete Pavement Surface shall consist of placement of a hot-mixed, hot-laid, asphaltic concrete surface or wearing course one and one-half inches  $(1\frac{1}{2})$  compacted depth on a previously placed bituminous concrete base course.

<u>Sealing</u> of all bituminous joints shall be six inches (6") on either side of the joint with approved bituminous sealer.

#### E. Replacement of Curb and Sidewalk

All new concrete curb and sidewalk and/or driveway shall be constructed in strict conformance with "Standard Specifications for Construction of Concrete Curb and Sidewalk" in accordance with cross-sections and dimensions as shown on approved plans of "Construction Standards".

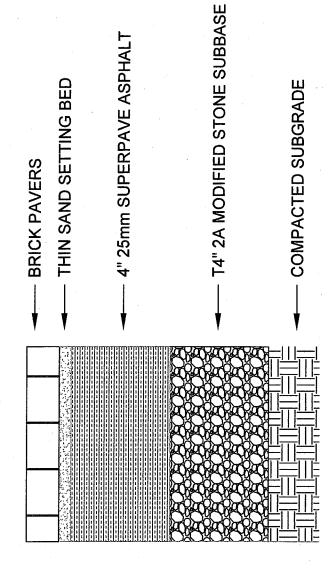
#### VII. <u>CLEAN-UP</u>

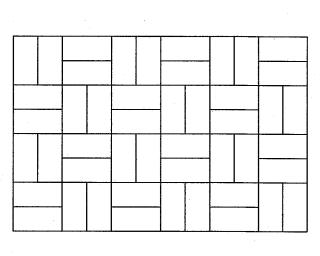
Before the work will be considered as having been completed, the Contractor shall clean and remove from the project and adjacent property all surplus and discarded materials, equipment, and temporary structures.

# PROJECT NO. ST-13-C04

1. Detail Sheet 1 of 2

2. Tree Planting List Sheet 2 of 2





**DOUBLE BASKET PATTERN** 

# PROJECT NO. ST-13-C04

# Tree Planting List

2 - Tilia cordata 'PNI 6025' - Greenspire littleleaf linden at 3 ½" -4" caliper